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### A week in photography



Despite the sophistication of modern autofocus systems, most of them aren't much help in landscape photography, where often the main requirement is to

ensure that everything from the foreground to the horizon is sharp. Stopping the aperture right down may still not give you enough depth of field, and even if it does, the image quality will fall well outside of your lens's sweet spot for

optimum sharpness. The solution is to use focus stacking, which sounds complicated but is easy when you know how - see page 12 to find out. Photojournalists, meanwhile, usually have more pressing concerns than front-to-back sharpness. Just getting the subject in focus can be a challenge when you're trying not to get killed. Turn to page 36 for a selection of powerful images from World Press Photo 2018. Nigel Atherton, Editor

Amoteur amateurphotographer.









#### **ONLINE PICTURE OF THE WEEK**

#### **Cherry Blossom**

#### by Andrea Heribanova

Nikon D800, 16-35mm, 1/250 sec at f/8, ISO 100

This beautiful spring scene picture was uploaded to our Twitter page using the hashtag #appicoftheweek. It was taken by Andrea Heribanova. She tells us, 'Each year I come across photos of the cherry blossom around St Paul's Cathedral in London, but I've never had the chance to take one myself. I decided to head there during the blossom bloom. The most common composition shows off the dome with the cherry blossom but I wanted to capture something a bit different. Since I like including red double-deckers in my London shots. I decided to wait for one to pass through the scene. I prefer the old Routemasters, which run outside St Paul's, as it reminds me of the London in old photos.



Each week we choose our favourite picture on Facebook, Instagram, Flickr, Twitter or the reader gallery using #appicoftheweek. PermaJet proudly supports the online picture of the week winner, who will receive a top-quality print of their image on the finest PermaJet paper\*. It is important to bring images to life outside the digital sphere, so we encourage everyone to get printing today! Visit www.permajet.com to learn more.



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CD/DVD Send us a disc of high-resolution JPEG, TIFF or PSD images (at least 2480 pixels along its longest length), with a contact sheet, to the address on page 53. Via our online communities Post your pictures into our Flickr group, Facebook page, Twitter feed, or the gallery on our website. See details above. Transparencies/prints Well-packaged prints or slides (without glass mounts) should be sent by Special Delivery, with a return SAE, to the address on page 53.



#### **NEWS ROUND-UP**

The week in brief, edited by Amy Davies and Hollie Latham Hucker



#### Reuters joins Photo North Festival

Organisers of the inaugural Photo North Festival, taking place in Harrogate from 9-11 November have announced that global photojournalists from international agency Reuters are the latest to sign up to the festival. The aim is to inspire the next generation of image-makers with portfolio reviews and presentations over the three-day event.

#### Sony firmware upgrade for A7R III

Sony has announced version 1.10 of its firmware for the A7R III. The main new addition is the option to select Pixel Shift Multi Shooting with a shorter shooting interval of 0.5 seconds. Delays of between 1-30 seconds were previously available, with the new shorter time reducing the risk of subject movement.



#### Gold-plated Lomography lens

Lomography's Daguerroeotype Achromat 2.9/64 Art Lens is to be available in a limited gold-plated edition. Fitted with a unique Waterhouse Aperture system, different aperture plates can be slotted in to achieve different bokeh effects – the special edition also includes a set of gold-plated plates. Available in Canon and Nikon mounts, RRP is £479.



# Official pricing for Sigma 70mm Macro

The new Sigma 70mm f/2.8 DG Macro Art lens will have a suggested retail price of £499.99. The Canon mount will be available from the end of May, the Sigma mount in June, while the Sony FE mount is still to be announced. The lens is the first macro optic in Sigma's renowned Art line-up.

#### DJI announces Phantom 4 Pro v2.0

A new variation of DJI's Phantom drone has been announced. Featuring many of the same features as the Phantom 4 Pro, version 2.0 offers reduced propeller noise by up to 60% and uses DJI's OcuSync transmission technology for high-resolution and low-latency digital video transmission. UK pricing is around £1,600.



BG

Shocking attack of 'zombie mice' is bad news for albatrosses

This gruesome image of a juvenile greyheaded albatross came second place in the Environment category of the 2018 World Press Photo contest. It was taken by *National Geographic* photographer, Thomas P. Peschak on Marion Island, South African Antarctic Territory, and shows an albatross left severely





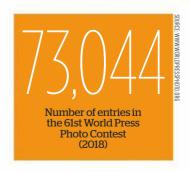
injured following an attack by mice – an invasive species that has begun to feed on living albatross chicks and juveniles.

Mice were introduced to the island by sealers in the 1800s. An expanding population and declining food sources led the abnormally large mice to attack albatrosses and burrowing petrels. Read the full story in June's *National Geographic* and see more jaw-dropping images from World Press Photo 2018 on page 36.

#### Words & numbers

I used to call myself a war photographer. Now I consider myself as an antiwar photographer

James Nachtwey
American photojournalist







# Panasonic reveals new rugged compact

PANASONIC has introduced a tough compact camera to its Lumix line-up. Following on from the FT5, the new FT7 features best-inclass waterproofing, enabling it to be taken to a depth of 31 metres.

Other tough credentials of the camera include freezeproofing, dustproofing, pressure resistance and shockproofing. It has a 20.4MP high-sensitivity sensor, which is joined by a 4.6x optical zoom lens,

providing an equivalent focal length of 28–128mm, with optical image stabilisation to help keep shots sharp when shooting in rocky conditions.

A new feature on the FT7 is the addition of a 0.2in, 1,170k-dot-equivalent Live View Finder (LVF), which is ideal for composing images when bright sun prevents use of the rear 3in, 1,040k-dot resolution screen. The LVF also saves battery power, which can come in handy

The Lumix FT7
features a
20.4MP sensor
and 28-128mm
equivalent zoom

when shooting in harsh conditions, such as the very cold when participating in winter sports.

Further features include 10fps shooting (with fixed focus), 'Light Speed' AF, and Panasonic's acclaimed 4K Photo mode, which enables shooting at 30fps, with the ability to extract 8MP stills in-camera.

The camera has Wi-Fi connectivity for sending shots to your smart device for uploading online, with the ability to use your phone to geotag your images also included. USB charging is another new function which has been added to the FT7, meaning you can charge the camera on the go, using battery packs and the like, on those occasions when you don't have access to a standard plug socket.

Other useful features for outdoor adventures include an inbuilt altimeter, compass and torchlight function, which can be used without the camera being activated.

The Lumix FT7 will be priced at £399 RRP and will be available in three colours: orange, blue and black. It is expected to go on sale from July.



#### Widest Hasselblad Iens revealed

THE WIDEST lens available in Hasselblad's XCD medium-format line-up has been officially revealed. The 21mm f/4 lens provides a 17mm full-frame equivalent.

It also features a 32cm close–focus ability, with a 1:10 image scale. The lens is especially targeted towards landscape and architecture photographers. Like other XCD lenses, it features an integral central shutter, giving a wide range of shutter speeds and full-flash synchronisation up to 1/2000sec.

The XCD 21mm lens will begin shipping in the middle of May, and has a recommended retail price of £3,750.



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# V&A Museum to open Photography Centre

THE WORLD'S photographic experiments, pictures by iconic 20th-century photographers, recent acquisitions of work by Linda McCartney – gifted by Paul McCartney – and newly commissioned works by Thomas Ruff will all be on display when the V&A opens the doors to its new Photography Centre on 12 October this year.

Designed by David Kohn Architects, the first phase of the Photography Centre will see the photography space at the V&A more than doubled. The first display at the centre will trace a history of photography from the 19th century to the present day through the theme of collectors and collecting.

Drawing from the V&A's significantly expanded collection, following the transfer of the Royal Photographic Society (RPS) collection, the display will show important prints and negatives by pioneers William Henry Fox Talbot, Julia Margaret Cameron and Frederick Scott Archer, alongside camera equipment, photographic publications and original documents.

The entrance to the new centre will be through a spectacular installation of over 150 cameras, with an interactive camerahandling station. Other

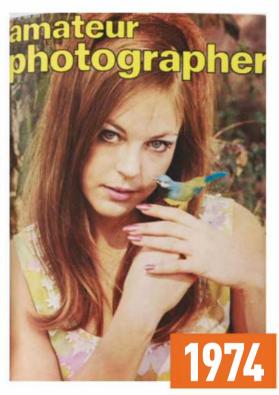
highlights will include a new body of work commissioned from Thomas Ruff, a collection of significant 20th–century photojournalism and images from some the world's most influential modern and contemporary photographers, including Man Ray, Martin Parr, Walker Evans and Cindy Sherman.

A three-week spotlight on photography across the V&A, including talks, screenings, events, courses and workshops will also mark the opening of the Photography Centre.

Entry to the new Photography Centre will be free. See vam.ac.uk for more details.

## Back in the day

A wander through the AP archive. This week we pay a visit to 1974



22 MAY 1974 sees a spaced-out cover model holding what looks suspiciously like a stuffed bird... man, it's beautiful, and cover lines would have just spoilt it. Does the Mona Lisa need an explanation? Anyway, that week's issue of the magazine was an eclectic mix, with everything from Elliott Erwitt on dogs to an interview with Sarf Lunnun's boxing legend Henry Cooper. Erwitt was probably as monosyllabic with hapless photography journalists back then as he is now, so it's probably just as well that AP's scribe was unable to interview him owing to Erwitt slipping a disc. The images are great, though. Hardware-wise, the main test was the Sekonic L-28C studio lightmeter (good to see they are still around). The 'May Clubman', meanwhile, was a certain Anne Jackson. These days, we'd call her the club-person to avoid accusations of sexism, or even call that section In the Club. Or maybe not.

# DOG SHOW

Elliott Erwitt's images have certainly stood the test of time

Yongnuo introduces 60mm f/2 Macro lens

BEST known for its affordable lenses, Hong Kong-based Yongnuo has revealed the 60mm f/2 Macro lens.

It offers a minimum focus distance of 0.234m (9.2in), and offers up to a 1:1 magnification ratio. According to Yongnuo, the lens adopts a high-precision focusing structure design, and has seven aperture blades.

Ghosting and flare is prevented thanks to various lens coatings. The bayonet of the lens is made from chrome and is designed to be wear and corrosion resistant.

Compatible mounts and pricing are still to be confirmed.



Press photos of the lens appear to show a Canon mount

For the latest news visit www.amateurphotographer.co.uk



#### **Exhibition**

# Through the lens of John Thomson

Don't miss this awe-inspiring exhibition of portraits and landscapes from old Asia, says **Geoff Harris** 

Through the Lens of John Thomson runs at the Brunei Gallery, SOAS, London WC1H OXG, until 23 June. Entry is free. See www. soas.ac.uk/ gallery hen one thinks about eminent 19th-century photographers who were lucky enough to work in Asia, names like Felice Beato and Isabella Bird come to mind, but less well known is a native of Edinburgh called John Thomson (1837-1921). Hopefully, a fascinating exhibition about Thomson at the SOAS Brunei Gallery in central London will restore his reputation among aficionados of travel and documentary photography.

Thomson spent a decade in Asia, mainly working in Hong Kong, China, Thailand (then Siam) and Cambodia, and made some unforgettable images of people from all backgrounds – from peasants sweating away in Imperial China, right through to elite mandarins and even the King of Siam (the same one who features in *The King and I*). Despite being foreign, relatively young and unschooled in local tongues, Thomson was able to win the trust of his diverse subjects, and got them to be themselves at a time when portrait photography was a convoluted and formal process involving long exposures. He was also a skilled landscape and architectural

photographer, and was the first European to photograph Angkor Wat.

Born in the year Victoria came to the throne, Thomson was one of nine children and came from a relatively humble background – his father spun and sold tobacco. Thomson became apprenticed to a local optical and scientific instrument manufacturer, and learned the principles of photography during this time. Despite the demands of his day job, he also attended evening school at what is now Heriot-Watt University. By 1861,he had become learned enough to join the Royal Scottish Society of Arts, but in 1862. decided to travel to Singapore to join his older brother William, a watchmaker and photographer.

Once out East, Thomson developed a keen interest in the local people and their colourful cultures, and eventually relocated to Siam. A combination of networking skills and good fortune led to him being invited by the Siamese royal family to take their photographs, along with various imposing buildings and ceremonies that westerners rarely witnessed. The then king, Rama IV, was



King Rama IV of Siam, Bangkok, 1865.
Thomson had a rapport with this famous king



#### 'He transported a camera and portable darkroom through jungles and over challenging terrain'

very interested in Western science and astronomy, while also keen to show off his palaces and temples to Thomson.

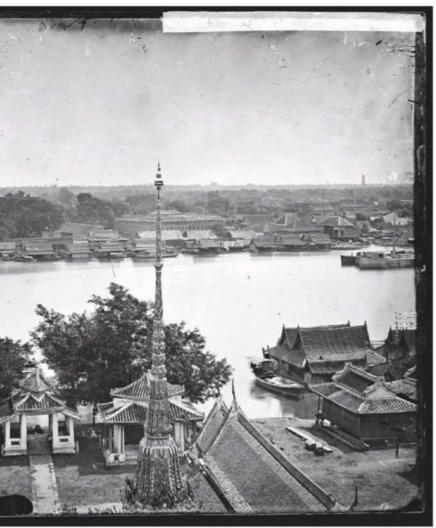
We said at the beginning that Thomson was 'lucky' to work in South East Asia in the era before mass tourism, but it was a tough environment for Westerners, and he nearly died from jungle fever during the trip to Angkor Wat in neighbouring Cambodia. Heat and disease were one thing, but Thomson also had to transport a cumbersome wet collodian camera and portable darkroom through jungles and over challenging terrain.

Thomson earned the money to fund these trips through his portrait studio, and he did particularly well when he relocated to Hong Kong. Between 1868 and 1872, Thomson's reputation and skill at making contacts enabled him to make extensive trips to China, including the imperial capital of Beijing. Again, he



Manchu Bride, Beijing, 1871-2. Note the glimpse of sadness in the relatively high-born bride's eyes

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Panorama of the Chao Phraya river, Bangkok, 1865. Traditional wooden and floating houses line the river bank, beginning at the Grand Palace and running south as far as Pak Klong Talad

captured a wide variety of subjects from landscapes to people, architecture, domestic and street scenes.

'As a foreigner, Thomson's ability to gain access to photograph women was particularly remarkable,' notes the exhibition curator, Betty Yao. His mastery of portraiture really shines through here, as Yao explains. 'Note the difference in expression between the apprehensivelooking Manchu bride [see far left] who is about to become the property of her husband and mother-in-law, and the comparatively humble boatwoman from Guangzhou [see right], who is very much her own woman.' Although Thomson was unable to photograph the Qing Emperor of the time, he took portraits of many powerful government ministers, and travelled extensively around the country.

Thomson returned to Britain in 1872 as he felt Asia was not a particularly healthy place to raise a young family. His collection of 700 glass plates returned with him, and are now expertly preserved at the Wellcome Library, London (they were almost thrown away). Despite being 150 years old, these glass negatives are



Guangdong, 1869-70. Thomson was greatly attracted by the boatwoman's natural beauty

in excellent condition, enabling the Brunei Gallery to showcase very large, in some cases life-size, prints. It's too early to say that this is the travel photography exhibition of the year, but it must be a very strong contender.

There's also a Just Giving campaign to restore Thomson's derelict grave – see justgiving.com/crowdfunding/johnthomson gravestone.



### Also out now

The latest and best books from the world of photography



#### **World Press Photo 2018**

Edited by Rodney Bolt, Thames & Hudson, £18.95, 240 pages, paperback, ISBN 978-0500970904



The World Press Photo (WPP) competition is, and has always been, divisive. Whether you think this is for better or worse depends entirely on your tolerance for images of war, famine and suffering. However, the WPP has always prided itself on its unflinching depiction of world events.

and this year's winning image is likely to do nothing to dissuade the competition's detractors. Ronaldo Schemidt's image of Venezuelan protestor José Victor Salazar Balza, engulfed in flames and running for help, is certainly an image that is upsetting but, as an image, it's difficult to beat (Balza, by the way, was fine and was encouraging people to keep protesting within a day). But this is just one image in many and, once again, the WPP highlights the most dramatic, informative and best photojournalism from across the globe. If you're unable to make it to the exhibition, this volume is well worth the shelf space.

#### **Shadows on the Wall**

By Peter Lindbergh, Taschen, £80, 288 pages, hardback, ISBN 978-3-8365-7360-3



Numerous books deal with celebrity portraits, so it can seem fruitless reviewing them when they feel a little interchangeable. However, German photographer Peter

Lindbergh's approach is different enough to warrant a few words. This book exclusively features Lindbergh's images of female models and actors, and revolves around his stripped-down approach. Rather than plastering them in high fashion and layers of make-up, Lindbergh instead prefers his models to come as they are. What this allows, particularly as each image is shot in black & white, is a more naturalistic approach. As a consequence, his sitters, famous as they are, become more relatable. It's a nice approach, and one that allows for the character of each person to shine through without being restricted by gloss and artifice.





Viewpoint Nigel Atherton

There will always be photojournalism, but if it will always be a paid career is a different matter

t this very moment, there are hundreds of men and women risking their lives in some of the most dangerous places in the world armed with nothing but a camera. Thousands more work tirelessly to tell stories that are less dangerous but are equally deserving of an audience – stories of not only cruelty and injustice, greed and corruption, but also heroism and sacrifice, and triumph against the odds.

I met a few of these photographers at the recent World Press Photo awards and am in awe of their dedication. This is not, after all, a career path that offers great prospects and a company car. In fact today's photojournalists are seen by some as being among the last of their kind, in a profession that has no future.

As Lee Bonniface, Marketing Director of Canon Europe, put it: 'In the past *The Sunday Times* would send you some place; they'd give you your tickets and a fixer – everything would be set up for you. But today you have to come up with the idea yourself and fund it yourself, or sell the idea to an editor before you go, and it's much more down to the photographer to organise. This gives them more creative freedom, but less financial security.'

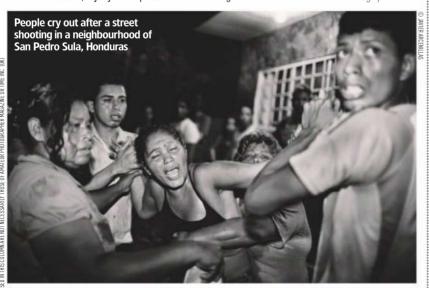
So just to clarify, these men and women often risk death, injury or imprisonment to

tell stories that they have to pay for the privilege of telling, with no guarantee that they will even recoup their costs. So why do they do it? Well there has to be a burning desire to make the world a better place. That passion was evident at the seminars, with more than one of them fighting to hold back tears as they told the stories behind their pictures. Some of them have seen things nobody should have to see. But they do it because the world needs to know about it. Many of them become activists and set up charities to support the causes they are photographing.

But compassion doesn't pay the mortgage, and the public appetite for hard news and social issues is waning, thanks to a fixation with self-obsession and celebrity culture, and a lack of trust in news. Photojournalists are having to derive their income from things other than selling pictures. Their work builds their reputation, which they leverage to do talks/workshops. A few are lucky to get some support from companies like Canon, who sponsor World Press Photo.

Think about this as you look at the photos in our feature on the World Press Photo contest winners on page 36.

**Nigel Atherton** is Editor of *Amateur Photographer*.



**Do you have something you'd like to get off your chest?** Send us your thoughts in around 500 words to the address on page 53 and win a year's digital subscription to AP, worth £79.99

#### In next week's issue

On sale Tuesday 29 May



# Affordable classics

John Wade shares his pick of the best collectable and usable vintage cameras



#### Social engagement

Make your social media presence more prominent with Jon Devo's top tips

#### **Sigma 14-24mm f/2.8 Art**

Michael Topham tests Sigma's stunning new ultra-wideangle zoom lens

#### **Clay shooting**

We take a close look at Steve Schapiro's portraits of the young Muhammad Ali

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EXPERIENCE BETTE



#### **James Abbott**



James Abbott is a landscape and portrait photographer based in Cambridge. He's also a freelance photography journalist and editor

specialising in photography techniques, tutorials and reviews. If you can think of a subject, he's probably photographed it. See more of his work at www.jamesaphoto.co.uk.





You can use any camera and lens for focus stacking, although for landscapes wideangle and telephoto lenses are most commonly used.

▼ Photoshop Images shot at different planes of focus need to be blended together in postprocessing, and Photoshop can do this.







# Absolute sharpness

Focus stacking is a great technique for getting front-to-back sharpness in landscapes at f/11. As James Abbott reveals, it's not that difficult, either

harpness and depth-of-field, or indeed a lack of it when shooting some subjects, have long been a creative way of controlling what the viewers of images are drawn to. And for the majority of landscapes, a large depth-of-field with front-to-back sharpness is often preferable. The only problem is, it's not always possible to get everything in focus; some parts of the scene will be pin-sharp while others, usually the background, will be 'acceptably sharp', and that's where focus stacking

Focus stacking makes images look hyperreal because the results are much sharper than a single exposure at f/11 or f/16, and the depth-of-field offers pinsharpness throughout the scene. The human eye certainly cannot resolve this level of detail and sharpness, and is one of the many reasons why this is such a compelling technique. So compelling in fact, that it's even safe to say it's addictive: once you stack, there's no going back!

How to shoot focus-stacked images

Focus stacking requires you to shoot between three and five images of a scene, on average, with each focused at a different point in the scene. This ensures that absolute sharpness is achieved at all distances between the camera and the background, and just like shooting a panoramic image you have to make sure that in each shot the depth-of-field overlaps half of the previous shot and the next one. These images are then blended together in Photoshop.

When shooting stacked images, everything is exactly the same as shooting a single image of a scene; you use the same settings, ideally aperture-priority or manual mode, and filters as required to control exposure. The two main differences are that you shoot at either f/8 or f/11 to take advantage of the lens' sweet spot (see below), and you take a number of images at different focus distances. The easiest way to focus is to shoot in Live View, using the on-screen focus point



# Technique focus stacking

to set the point of focus for each shot. Start at the bottom of the frame and move up the screen to capture an image at each of the main depths/distances within the scene. Don't forget to overlap the in-focus areas in each shot to ensure that sharpness is captured throughout the scene across three to five images.

#### When to focus stack

Like any technique there's a time and place for focus stacking, so use your judgement to avoid unnecessary editing and a hard drive full of image files. The basic test is whether or not the foreground interest is close to the camera or if the detail in the foreground and background are equally important and both need to be pin-sharp. You also need to ask yourself if you'll be making a large print of the image? For many wider scenes where the foreground interest is a couple of metres away from the camera you can often get away with shooting at f/11-f/16 on a full-frame camera, or f/8-f/11 on APS-C. These settings provide sufficient overall image sharpness and depth-of-field for the respective camera formats.

#### **Beyond acceptable sharpness**

Acceptable sharpness is a term that's used to describe areas of an image that are in focus, but they are not as sharp as the area surrounding the actual point of focus. As the name suggests, this type of sharpness is deemed acceptable by most, and for the majority of landscape images, this occurs at the bottom of the frame or right at the back of the scene – so not necessarily prominent parts of the image. For scenes where the foreground is close to the camera and the background much further back, this phenomenon is accentuated and makes a strong case for using focus stacking to ensure sharpness throughout.

#### The sweet spot

This is the point where the lens is able to resolve detail at its sharpest before diffraction becomes an issue and results in an overall softening of images. The sweet spot of lenses most often sits in the middle of the aperture range, so f/8 or f/11.

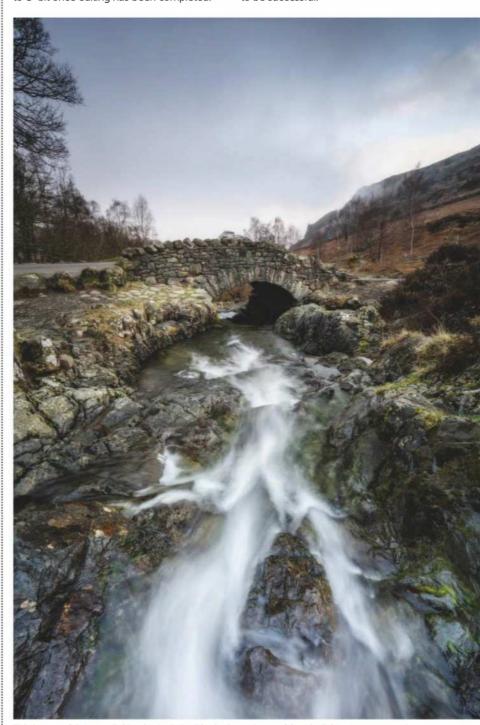
This can sometimes be confusing because when you say, 'the point a lens is at its sharpest', it's not uncommon for people to think that this statement relates to depth-of-field. Depth-of-field is obviously larger at f/22 than it is at f/8, but overall image sharpness at f/8 is noticeably sharper than that at f/22.

Focus stacking is all about taking advantage of the best image quality your lens can offer, and while sweet spot apertures don't provide the largest depth-of-field, the process allows you to achieve a depth-of-field and level of sharpness far in excess of that which is possible at f/16 or f/22.

#### FOCUS STACKING IN LIGHTROOM & PHOTOSHOP

Once you've taken a set of focus-stacked images you'll need to merge them together to benefit from sharpness throughout a single image. Luckily, the process is often extremely easy because Photoshop offers controls that automate the process once you've output your raw files as JPEGs or TIFFs. The best file format to use is 16-bit TIFF because this is the best bit depth for smoother colour and tonal graduations. You can reduce images to 8-bit once editing has been completed.

There are times when Photoshop is unable to successfully stack images, and this occurs when there's either movement in the scene or when your source images haven't overlapped the sharp areas from one image to the next, thus leaving gaps. Practise makes perfect with this technique, and the more you edit the better you'll become. You'll also become aware of software limitations and be able to identify which scenes are most likely to be successful.



This image of Ashness Bridge in the Lake District is made up of four individual exposures shot at different focus points within the scene. I used f/11 to help slow the shutter to blur the moving water. Sony Alpha 7R III, 16-35mm, f/2.8 at 16mm, 0.8 sec at f/11, ISO 80



# Beautific Station Station | Station

#### 1 Sync raw settings

In Lightroom, process the first image in the stacking set applying all the necessary adjustments. Once you're happy, hold Shift and left mouse click on the last image in the set. Next press the Syncronize button and when the dialogue window opens, click on Check All and then Syncronize. This will apply the same adjustments to all images.

#### 2 Export images

With all the images in the set still selected, press Ctrl+Shift+E to open the Export dialogue window. Under Export To select Desktop, and check Put in Subfolder. Next, under File Settings select TIFF as the Image Format, AdobeRGB (1998) for Color Space and 16 bits/component. Finally, click on Export, but make sure Open in Photoshop isn't selected.





#### 3 Load files as Layers

Open Photoshop and go to File>Scripts>Load Files into Stack, and when the dialogue window opens set Use to Folder. Now click on Browse and locate the folder you create in the previous step. Make sure Attempt to Automatically Align Source Images is checked and click OK. Photoshop will now stack the images as Layers and align them.

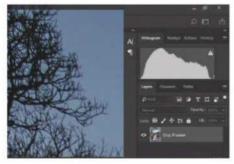
#### 4 Auto-Blend Layers

On the Layers panel, the top Layer will be active and highlighted. Hold Shift and left mouse click on the bottom Layer so all are highlighted. Next, go to Edit>Auto-Blend Layers and Photoshop will automatically identify Stack Images. Make sure Seamless Tones and Colors is checked, but be sure that Content Aware Fill Transparent Areas isn't.



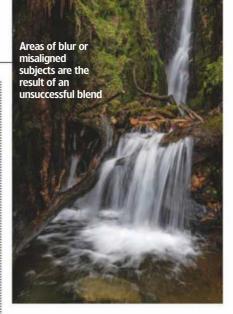
#### 5 Check for errors

Zoom into the image and move around looking for any anomalies. There are times when Photoshop fails to blend images correctly, and problem areas will show blur or misalignment of elements in the scene. If this occurs you can often simply create a New Layer and clone out the errors, but if the errors are too difficult to fix use the guide on the right.



#### **6** Crop and Flatten

Flatten the Stacked image Layers by clicking on the menu represented by four horizontal lines at the top right of the Layers panel. Now you can apply any additional adjustments. Once all editing has been completed you can convert the TIFF to 8-bit and save the images with all images intact, or save as a JPEG if you no longer need Adjustment Layers, etc.

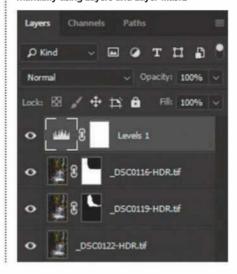


#### When Photoshop fails

There will always be times where the automated blending processes applied by Photoshop gets things wrong, and the result is a mismatched blending of the source images. This may appear as areas of blur or misaligned subjects, which is what happened with the waterfall. In these situations you can sometimes flatten the image and clone out the offending areas, but if this isn't possible you'll need to do a manual blend. To do this you'll need to load images into a stack with alignment checked. Then using Layer Masks you can mask in the sharp areas. This is, of course, more complicated, but something you may need to do.



To ensure a smooth blend you may have to do it manually using Layers and Layer Masks



# <u>T</u>echnique

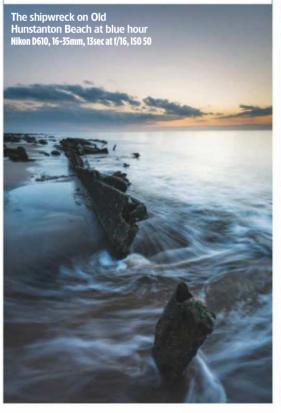
### **Advanced approaches** to stacking

#### Big Stopper stacking

Extreme long exposures are hugely popular, so you might be glad to hear that you can also focus stack Big Stopper shots. The downside, however, is that with exposures beyond 2min and/or in changeable light, blending the images becomes trickier. Some cameras can 'see' through and even autofocus through Big Stoppers, so with these you can shoot using AF and Live View. If your camera is unable to do this set the three, four or five points of focus with no filter attached and make a note of the distance for each shot. Now with the Big Stopper attached you can manually focus at the correct point using the distance scale on the lens.

#### Shutter-speed focus stacking

The more you shoot focus-stacked images the more confident, proficient and experimental you'll become. This image was taken with the camera on soft wet sand, so shooting several images at different focus points wasn't working with a sinking tripod. Instead, a depth-of-field image was shot at f/16 to get everything sharp to acceptably sharp at the back, and a second shot was then taken at f/4 to allow for a faster shutter speed to capture dynamic movement in the tide. The focus point for this second shot was changed to the front of the boat and was sharper here than the f/16 version. These images then had to be focus stacked manually using Layer Masks in Photoshop.





#### HDR focus stacking

If you fancy a real shooting and editing challenge, HDR focus stacking is a technique that will put your skills to the ultimate test. For this, it's best to use Auto Exposure bracketing set to three images at two-stop increments. For the focus stacking side of things, three focus planes are best to keep the total number of images to nine. Take a set of three bracketed exposures at each focus point. You then have to blend each set of three exposures into a single HDR image, with the resulting three HDR images being merged together using the technique on the previous pages.







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# Amateur Photographer of the Year

We bring you our favourite top 30 images uploaded to Photocrowd from Round One **Best of British**, with comments by the AP team



# Round One Best of British

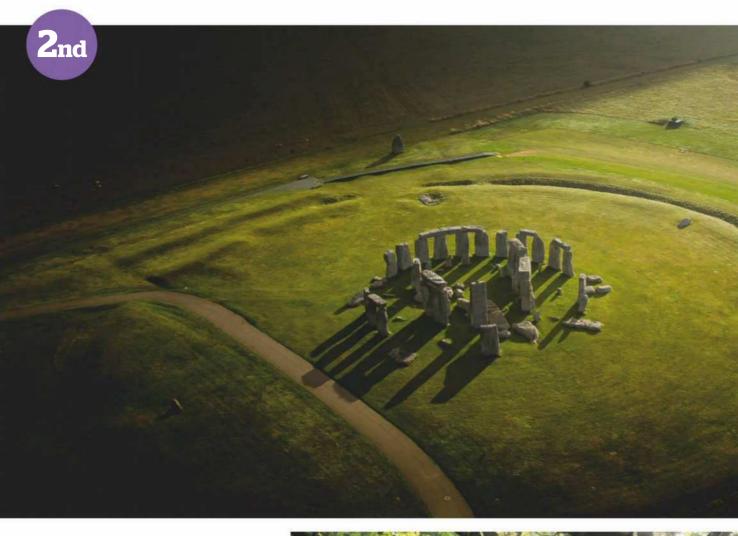




PAWEL ZYGMUNT wins round one of APOY. He takes home a Sigma 100–400mm f/5–6.3 DG OS HSM Contemporary lens and a Sigma TC-1401 Tele converter. The OS system allows photographers to take shots in unstable circumstances, while the narrow angle of view makes it possible to compress perspective while offering flexible handling of the background. Pawel also wins a Sigma TC-1401 Tele converter equipped with an SLD (Special Low Dispersion) glass element. The total prize value is £1,099.98.

#### 1 Pawel Zygmunt Ireland 30pts Nikon D810,16-35mm, 20sec at f/16, ISO 64

Glencoe is a tourist (and photography) hotspot, so it takes a really special picture to stand out from the crowd. This is a prime example from Pawel. The dark patch of woodland balances really well with the large expanse of snow, and the wonderfully subtle early morning light casts a beautiful orange glow across the scene. To get into position Pawel had to hike up Beinn a'Chrulaiste, battling the snow, but it was clearly worth it to be greeted by this stunning vista.



**2 Steve Banner UK 29pts**DJI Phantom 3 drone, 3.61mm, 1/149 sec at f/2.8, ISO 100

Launching his drone before the crowds descended allowed Steve to capture this fabulous panorama of Stonehenge. The morning light led to wonderful long shadows, giving the stones and surrounding features a three-dimensional feel. The deep shadows on the left are a little lacking in detail, but that doesn't detract from the impact of the picture. The sweep of the path and the arc of the well-trodden grass on either side of the landmark direct the eye effectively around the frame. Steve took this picture before the ban on drones flying over Stonehenge was enforced - his drone receives regular updates showing him where he can legally fly.

#### 4 Tim Crabb UK 27pts

Canon EOS 5DS, 24-70mm, 1/8 sec at f/16, ISO 100
A celebration of spring, this image of the morning sun bursting through woodland in Dartmoor National Park is a delight. The contrast is well controlled, and while some loss of detail is unavoidable, it has not affected the general mood of the picture. Tim had been hoping to catch a sunrise shot, but his plans were scuppered by dense fog. He spotted this lovely scene on the walk back to his car.









# **3** Rob Amsbury UK 28pts Pentax K-1, 15-30mm, 25sec at f/2.8, ISO 3200. Beam 3sec at f/2.8, ISO 12,800

South Stack Lighthouse is situated on an islet off Anglesey in Wales. The structure is a popular spot for breeding seabirds, but it was the night sky - in particular the Milky Way – that attracted Rob. 'Sitting in the shadow of the headland you can see a hundred satellites, shooting stars, meteors and planes passing by,' he explains.

**5 John Bauch UK 26pts**Canon EOS 50D, 17-55mm, 1/250 sec at f/9, ISO 100

What at first looks like a simple snapshot becomes so much more on closer inspection. The framing is great: no one is awkwardly cropped by the edges of the frame, and the pattern created by the waves draws us into the picture and off into the distance. It has the flavour of an image by UK photographer Simon Roberts who shows us how groups of people interact with the landscape and each other.



#### 6 Michael Farley UK 25pts

Fujifilm X-E2,18-55mm,1/125sec at f/8, ISO 1000 A rainy day on the car-free island of Sark in the Channel Islands made the foliage particularly green and lush,

leading to a suitably atmospheric shot.

#### 7 Neil Burnell UK 24pts

Nikon D810, 24-70mm, 1/100sec at f/7.1, ISO 100

The Shard in London offers stunning views from the public viewing platform, but it's equally impressive at ground level, as Neil demonstrates.



#### 11 Jasminas Gabrielius Braticius UK 20pts

Canon EOS 5DS R, 55mm, 10sec at f/8, ISO 100

This technically accomplished shot of Battersea Power Station is all the more striking due to the sepia tone, which adds warmth.

#### 12 Tony Sellen UK 19pts Nikon Df, 35mm, 1/1250sec at f/6.3,

Street photography is often about clever juxtaposition, and Tony has nailed it here. The splashes of red in the man's suit are enough to link the two elements together.



# **10 Neil Burnell UK Opts** Nikon D810, 16-35mm, 1/350sec at f/6.3, ISO 100

Neil specialises in long exposure monochrome and minimalist photography, and this shot of Durdle Door in Dorset is a fine example.

#### 14 Andi Blake Unknown 17pts

Canon EOS1200D, 20-35mm, 1/4000sec at f/4, ISO 800

Andi took this picture at Glastonbury Festival and has done a great job of making sense of a chaotic scene.









#### 8 Dave Balcombe UK 23pts

Canon EOS 7D Mark II, 15-85mm, 1/4sec at f/6.7, ISO 1000

The mist, airmen, and shape of a Lancaster bomber combine to create an image that is pure nostalgia. There is just enough detail in the shadows to reveal the markings on the plane.

#### 9 Christine Matthews UK 22pts

Canon EOS 70D, 70-300mm, 1/400sec at f/6.3, ISO 100

Hearing that one of the clock faces of Elizabeth Tower, which houses Big Ben, was being cleaned, Christine Matthews headed to Westminster Bridge and took up position. Her patience paid off.





#### 13 Sienna Anderson UK 18pts

Nikon D750, 10-24mm, 1/500sec at f/5, ISO 160

To achieve this image of the Royal Naval Reserves engaged in a charity tug-of-war competition, Sienna had to jump out of a boat into the Solent.







#### 15 Danielle Spencer UK 16pts

Canon EOS 20D,100-400mm,1/1250sec at f/7.1, ISO 100

Surf and golden sunshine, what's not to like? Using the panoramic format gives a sense of space.

#### 16 Howard Mason UK 15pts

Canon EOS 6D Mark II, 24-105mm, 4secs at f/8, ISO 500

Howard spent the evening at

Didcot Railway Centre, where he tested his low-light skills to the max.







17 Pawel Zygmunt Ireland Opts
Nikon D810, 24-70mm, 15sec at f/14, ISO 64
It was an exhausting hike up to the Old
Man of Storr for Pawel, but when the
sun came out and the snow cloud
arrived it must have felt worth it.

**18** Andrew Jones UK 13pts
Nikon D750, 70-300mm, 1/250sec at f/7.1, ISO 100
It's the shape of the mountains and the well–positioned tree that really make this picture. The cloud balances the clump of trees on the right nicely too.



**21** Daniel Sands UK 10pts
Canon EOS 5D Mark III, 24·105mm, 2secs at f/11, ISO 250
Daniel had to abandon his original composition, but when he turned around he spotted this new, superior, one.



**28** Martin Rawle UK 3pts
Nikon D7000, 10-24mm, 1/10sec at f/18, ISO 100
The evening light has brought out the textures of the beach, but it's the dynamic composition that really makes this shot.

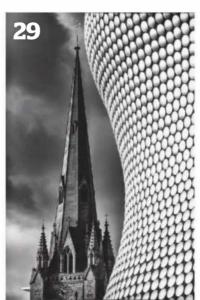


**22** Agnes Carpenter UK 9pts
Panasonic DMC-TZ60,1/60sec at f/4.7,ISO 200
The West Pier in Brighton has been photographed countless times, but this multiple exposure is a fresh take on it.



Catching 10 of the Red Arrows in flight, rather than the usual 9, is effective.

**29** John P Robinson UK 2pts
Nikon D300,18-105mm,1/400sec at f/10, ISO 320
John left just enough space between
the spire and the Selfridges building.











# **20** Danny Kenealy UK 11pts Canon EOS5D Mk III, 16-35mm, 131sec atf/11, ISO 100 Using a slow shutter speed has led to a lovely softness in the reflection.













#### 23 Helen Trust UK 8pts

Canon EOS5D Mk III, 24-70mm, 4mins at f/II, ISO50
Using a long exposure has created a
beautiful wash of colour, and a soft
blurring between the sea and sky.

#### 24 Jamie Leasure USA 7pts

Canon EOS-1D X, 24-105mm, 1/250sec at f/5.6, ISO 100

Jamie used a portrait-lighting technique to highlight the curves of the car.

#### **25** Rob Amsbury UK Opts

Pentax K-1, 28-105mm, 1/40sec at f/5.6, ISO 100

Rob waited for the perfect light to shoot The Dark Hedges in Northern Ireland.

#### 30 Shaun Mills UK 1pt

Canon EOS 5D Mark IV, 70-200mm, 1/1000sec at f/2.8. ISO 800

Snow is rare on Mersea, but Shaun knew exactly where to go when it came.



27 Laura Allegri Italy 4pts

Fujifilm X20, 28-112mm, 1/1300sec at f/3.6, ISO 100

The joy this image exudes is infectious. Converting it to black & white was a good decision by Laura as it allows us to concentrate on the facial expressions.





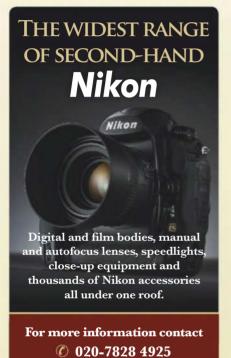
### The 2018 leaderboard

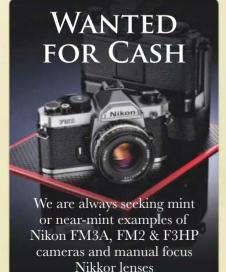
Pawel Zygmunt from Ireland heads up the first leaderboard, earning 30 points, while Jasminas Gabrielius Braticius of the UK makes it into the overall top 10 with 20 points (instead of 21) as Neil Burnell has two images in the Top 30 and only the highest-scoring image counts.

1	Pawel Zygmunt	30pts	6 Michael Farley	25pts
2	Steve Banner	29pts	7 Neil Burnell	24pts
3	Rob Amsbury	28pts	8 Dave Balcombe	23pts
4	Tim Crabb	27pts	9 Christine Matthews	22pts
5	John Bauch	26pts	10 Jasminas Braticius	20pts

To enter and find details of the upcoming rounds of APOY 2018 visit www.amateurphotographer.co.uk/apoy and click Enter Now

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Centre-Weighted Metering. Supplied with the R-UW AF Zoom Nikkor 20-35mm f/2.8 underwater Autofocus lens. The body is made of die-cast aluminium alloy; all joints sealed by O-ring gaskets to ensure absolute water tightness, able to withstand pressures of up to 10kg/cm2 at a depth of 100m (320ft). Price: £2495.00.



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# ETTER OF THE WEEK WINS A SAMSUNG EVO PLUS MICROSD CARD. NOTE: PRIZE APPLIES TO UKAND EU RESIDENTS ONLY

# Inbox

**Email** ap@timeinc.com and include your full postal address. **Write to** Inbox, Amateur Photographer, Time Inc. (UK), Pinehurst 2, Pinehurst Road, Farnborough Business Park. Farnborough. Hants GU147BF

#### **LETTER OF THE WEEK**

# Samsung woes

I am 83 years old and have owned a Samsung WB250F for a couple of years now. It lets me email photos directly from the camera. But, a few weeks back, it fell into our garden pond and the extensive water damage will be too costly to repair. As a

replacement, I bought a later model (WB350F) from eBay, advertised as 'brand new'. The



Roger likes the emailing feature on the Samsung WB250F

camera was still in its original unopened box. Upon following the activation procedures, I found to my horror that the Wi-Fi/emailing facility would not work. There was an on-screen message: 'we are unable to find "gld.samsungosp.com"' (an address I hadn't entered). On calling the Samsung help line, I discovered that two years after a model ceases to be manufactured, it withdraws its support to internet service providers. I have spoken to a camera repair specialist in Horley, Surrey, who wants to examine the camera. Before I do this, I thought I'd ask your opinion. By not giving purchasers warning notice of the Wi-Fi deletion, is Samsung acting within the Sale of Goods Act?

**Roger Dickinson** 

Under the Consumer Rights Act 2015, the contract of sale is between you and the retailer, not the manufacturer, so it's the seller's responsibility to ensure the product is fit for purpose. You need to contact a specialist lawyer if you consider pursuing any claims. To put things into context, the WB350F is a 2014 model, and Samsung has since stopped making standalone digital cameras, which probably explains the decision to remove the Wi-Fi/email service. It's likely you bought the camera from a private seller who had unsold stock. If you use a smartphone/tablet. I suggest trying the Samsung SMART Camera app, from Apple Store or Google Play. If this doesn't work, you'll have to use a memory card reader to copy pictures to your computer for emailing. Try not to let this headache spoil your enjoyment of your camera in the meantime. Hopefully our Letter of the Week prize will be some consolation - Andy Westlake, technical editor



#### Pixma pain

After watching numerous YouTube videos and written reviews about the Canon PixmaPro 100S I decided to buy one. A printer that promised perfectly neutral mono prints at the click of a button was what finally swayed me.

Three weeks after buving it, I still can't produce a cast-free mono print. The blurb for the printer says either click on the black & white option in the printer driver or in the Canon Print Shop Pro software supplied with the device. My monitor is regularly calibrated, and I get perfect results with my Epson 1500 apart from awful green-tinged mono prints. With the Pixma Pro 100S my prints colour or mono - are consistently too dark and a neutral mono print is as elusive as the artist Banksv. I've been on numerous online forums where my problem seems to be shared by many others. So what is the secret of producing those beautiful neutral black & white prints we see rolling out of PixmaPro 100Ss on YouTube? **Mick Bidewell** 

We've not had any issues ourselves with the performance of the PixmaPro 100S. To rule out any factors that might be affecting accuracy, use genuine Canon ink cartridges and photo paper, and ensure that you set the correct media type in the printer preferences dialog box. Avoid using the 'Auto' option for 'Color/Intensity', which applies enhancements that can affect accuracy. Instead, use Manual/ Standard for colour photo printing. When using the 'Black and White Photo Print' option, set Color/Intensity to Manual and this time select 'Black and White' rather than the Cool. Warm or Custom tone options. You can also adjust the tone using sample patterns, as described in the printer's handbook - Matthew Richards

#### Weight issues

Most readers have suffered occasional back pain for a variety of reasons, but I was surprised to feel it a few days ago when attempting to take some macro shots in the garden. I was on my knees, handholding my Nikon D750 and Sigma 105mm macro lens, and framing the shot through the viewfinder. On leaning slightly closer, my lower back went. The

pain was severe. One week on, I'm still in pain.

The total weight of the camera and lens was 1.5kg, yet only a slight leaning forward did the damage. As an ex-miner I am no weakling and do not have a long-standing back problem, but readers should bear in mind the potential dangers of lugging heavy equipment around.

#### **Alan Davies**

Sorry to hear about your back problems, it sounds very painful. Back pain can strike at any time, it seems. On the positive side, at least the choice of very compact mirrorless cameras and lenses have helped somewhat. I can fit my entire Olympus OM-D system into one small shoulder bag — Geoff Harris, deputy editor

#### Staying sharp

I enjoyed the article on printing (*Printing: home or away* in AP 12 May), especially the photo labs. However, looking at the websites there doesn't appear to be any way of checking how big a print can be before losing sharpness. Any suggestions?

#### **Henry Partridge**

This depends on the output resolution you use; prints will start to look soft at less than 240 pixels per inch (ppi) – Andy Westlake, technical editor

#### Piece of mind

Until recently psychiatrists and psychologists the world over dismissed the conscious mind as being irrelevant. But now they are studying the conscious mind and its purpose. All this was unknown to me until June 2003.

I had my first mental breakdown in July 1977, but as I respond well to medication, I managed to stay in full-time employment, until I lost my job in 1991. No one suspected me of being ill. After January 1991, my wife then became the bread winner as whenever I filled out employment application forms I was asked for my health history. I settled down as the 'house husband', but it was of no consolation to me, being on the scrap heap in my early forties. I tried everything to get back into work. Being unemployed, over 40 years old and having a mental condition made me undesirable to employers.



Visit www.ageofcreativity.co.uk for more on the benefits of creative pursuits

I started considering what my conscious mind needed to make life worth living. Obviously I needed a creative pursuit that I enioved and looked forward to, so whenever we could spare the money I turned to photography, doing projects like positive documentary photography locally. As I also love natural history I turned our little garden into a miniature nature reserve.

Then, in June 2003, it struck me that the 'conscious mind' had a purpose, and keeping it content would also give me a fulfilling life. I've written a paper on my theory of the 'Purpose of Consciousness' and why creative pursuits are essential for a healthy mind, which I'm happy to share with you if you can print it in full. As photography has now become so easy and such an international language, I believe it is the most important creative activity for humanity worldwide.

#### **John Heywood**

Thanks for the letter, John. Other readers may wish to contact you about your theory, so we'll let you know. Sadly, we don't have the space to publish the unedited version in full, as you suggested. We are always interested in hearing other people's personal stories about how photography has helped them, whether physically, mentally or spiritually - Geoff Harris, deputy editor

#### A big'un or small 'un

I read Mike Smith's Viewpoint (AP 21 April) with a feeling of déjà vu regarding his comments on the problems of small sensor size. From the picture of Mike Smith, I reckon he's more than a tad younger than me. While not

disputing the physics in his article, I was reminded of some of the comments I got when I started photography. I was told by the club guru that I'd 'never get good photos with one of these small cameras' (35mm) and I should consider using a 120 roll-film camera. He later recounted how as a lad, he had been told that he'd 'never get good photos with one of these small cameras' (120) and should consider a 5x4.

Can you spot the trend? There may be little doubt that a good big'un is better than a good little 'un, but we all get accustomed to the kit we've got as long as it can produce the photos we like, and we ignore the shortcomings dictated by physics.

#### **Malcolm Christie**

#### Lens hood good

If it's true that you should 'never leave home without one', why do so many photographers shun the use of a lens hood? Even Sir Don McCullin, seen on TV using his DSLR in dry, hot conditions, was working hoodless. Apart from providing useful shading and avoiding dust gathering on the lens's front element, there is also the value of protection against casual bumps or worse. Seems like a good idea, but not one universally accepted judging by evidence in magazine shots and observations among other local photographers. Some petalshaped hoods do add bulk while other styles might hamper filter adjustments. Surely, there is more to support and not work against the merits of using a lens hood. No doubt those who disagree will be quick to speak up, with their reasons, perhaps?

**Bill Thorne** 



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\*FOR THE PURPOSE OF THE COMPETITION, THE DEFINITION 'AMATEUR' REFERS TO A PERSON WHO EARNS 10% OR LESS OF THEIR ANNUAL INCOME FROM PHOTOGRAPHY OR PHOTOGRAPHIC SERVICES



# Round three **Mono culture**

When we remove colour, the rules of composition, framing and lighting shift their parameters and require us to see the world differently. With everything pared back we can focus on the graphic elements of a scene. To hone your skills look at the work of monochrome masters such as Michael Kenna and Sebastião Salgado.

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# WILDLIFE WATCH

# Fox cubs

The best time to photograph fox cubs is just after dawn when they are most active and the light is at its best, says **Paul Hobson** 

FOXES probably have had more public misconceptions about them than any other British mammal. They are certainly one of our most adaptable and successful animals – even when the hand of human persecution is aggressively turned against them. Foxes have a varied diet, which is one of the main reasons for their ability to colonise both our towns and rural areas.

#### **Habitat**

Finding your local urban fox cubs should not be too difficult. Their earth could be in a garden, under an old building or in a brownfield site. You can start by asking local residents and workers. You will be surprised by how much information can be gleaned this way. Begin your

search for the fox cubs before dawn and walk the streets or countryside.

Once you come across a fox, stay back and watch where it goes. Sooner or later it will lead you back to where the cubs are. This may take several days and require watching from different positions, so patience is key. The area near the earth will usually have flattened vegetation and possibly a few clean, chewed bones and some feathers. Once you've found the earth, watch it from as far as is practical and use binoculars. In contrast to most British animals, urban areas are better to photograph foxes because here they are more used to people and rarely persecuted. But, larger cubs probably won't be that tame so good field skills are needed.



#### **Paul Hobson**

Based in Sheffield, Paul is a professional wildlife photographer. He uses his images to work with local and national organisations and has won many awards in national and international competitions. His book, Wildlife Photography Field Skills and Techniques shows you how to photograph Britain's wild animals and plants. Visit www.paulhobson.co.uk.

#### KIT LIST

#### Bait ▶

By placing some food, such as dog food, in the area where you want to photograph you will definitely increase your chances of success, particularly if you do it over a few weeks. It will also help the cubs' diet and reduce pressure on the parents.





# **Shooting advice**

FOXES give birth in early spring to between three and seven cubs, so by May, they may have been out of their earth for a few weeks. Now is a good time to photograph them because the larger cubs will be venturing further away from the earth, and you will have less chance of causing stress to the parents by working too close to the den. The best time to photograph is just after dawn. The cubs are most active and the light at its best. Before you start, watch the cubs and consider the light and backdrop.

My approach with fox cubs is to lie on the ground with my tripod opened fully out and the camera and lens as close to the ground as possible. I always make sure I am downwind and tucked into some cover (hedge base, wall or building). I select the widest aperture possible and adjust the ISO to get a reasonable shutter speed, at least 1/200 sec. I choose single shot and silent shutter mode so as not to disturb my subjects. I tend to wear black gloves, a hat and neutral-coloured 'rustle' free clothes so I don't draw too much attention to myself. My white lens has a camouflage cover as well.

When a cub turns up I wait and watch and take a shot when it appears relaxed. If it seems spooked by the noise, I will wait until it relaxes again.





# **About the** urban fox

Foxes are members of the dog family with lovely red fur and a bushy tail, and are smaller than many people imagine.

- Location Found across almost the entire country, with numbers declining in rural areas while increasing in towns and cities.
- Size Males (dog): 112cm, (tail is a third of this); females (vixen): 108cm
- Nesting Vixens give birth to 3 to 7 cubs in early spring
- Diet Wide and varied
   depending on habitat –
   includes earthworms, rabbits,
   rodents, birds, insects, fruit,
   carrion (dead animals) and
   food leftovers
- Population Around 260,000 in the UK



# PHOTO ROADSHOW

# Sand, sea and snakes

The swaying grasses and gentle dunes at Studland Bay make perfect foreground interest, says **Justin Minns** 

tudland Bay is a spectacular stretch of natural coastline in Purbeck, Dorset, featuring four miles of sandy beach with views around the bay to Old Harry Rocks and the Isle of Wight.

More than just beaches, Studland's golden sands surround a national nature reserve of wetlands, heaths and woodlands, home to a number of rare animals, including all six native British reptile species. Studland's dunes themselves are an unusual habitat known as dune heath, and with more than 75 hectares it is the largest area of dune heath on the South Coast.

Bequeathed to the National Trust as part of the Bankes family estate, along with Corfe Castle and Kingston Lacy, Studland was also Enid Blyton's inspiration for Toytown in her Noddy books.

#### Justin's top tips

- Set the alarm early to improve your chances of being in the right place at the right time. Aim to be at the beach an hour before dawn (opening times for the car park can be found on the National Trust website).
- Add a sense of depth to your photographs by getting close to your foreground and using a wideangle lens to emphasise the sense of distance. Remember to choose your foreground carefully to complement the view.
- If you're lucky enough to find reptiles in Studland's heathland, get down to their eye level and photograph them from a distance using a telephoto lens so as not to disturb them. You need a licence to photograph sand lizards and smooth snakes.



#### Fact file

#### Studland Bay

Location: 4 miles north of Swanage, just off the B3351. Pay and display parking (free to National Trust members) at South Beach, Middle Beach, Knoll Beach and Shell Bay.

**Cost:** Access to the beach at Studland Bay is free.

**Opening times:** The beach is open from dawn to dusk.

Visitors to National Trust properties can take pictures out of doors for their own private use. Amateur photography (without flash and use of a tripod) is permitted inside some National Trust properties at the General Manager's discretion. The National Trust does not permit photography at its properties for any commercial or editorial use without first seeking permission from National Trust Images. Fees may be charged. (Licensing images of National Trust properties through professional image libraries isn't permitted.) Requests to use any photographs for commercial or editorial use should be directed to images@nationatrust.org.uk.



# **Shooting advice**



#### **Justin Minns**

Justin is a landscape photographer and workshop leader who has been working with the National Trust for several years. His images have been widely recognised in photography competitions including Landscape Photographer of the Year. Visit www.justinminns.co.uk.

#### Get up early

Landscape photography is all about being in the right place at the right time. The beautiful beaches at Studland Bay with their sweeping views towards Old Harry Rocks are certainly the 'right place', and since they face east, sunrise would seem to be the 'right time'. From lovely dawn colours that, weather permitting, begin about an hour before dawn, to the first rays of sunlight bathing the landscape, sunrise is a very special time.

If you're planning on arriving at the beach before dawn it pays to do some preparation. I use apps to find the nearest parking areas and to check the tide times, position of the sunrise and, of course, the weather conditions. (Opening times for the National Trust car parks can be found on its website.)

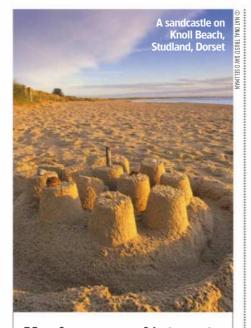
#### Photographing reptiles

The heathland at Studland is home to all six species of British reptiles. Photographing sand lizards and smooth snakes requires a licence, but here are some tips for shooting the remaining four: adder, grass snake, slowworm and common lizard. (A word of caution: while not aggressive, adders are venomous, so keep your distance.)

Reptiles have a keen sense of smell so stay downwind and be sure to tread softly in order to avoid vibrations.

Being cold-blooded, reptiles rely on the sun for warmth, so you'll find that the best way to photograph them is while they are basking in the sun. They tend to use the same basking spots each day, so once you've found a favourite area, you can then return in the early morning and quietly set up before they arrive.

To avoid disturbing a reptile use a telephoto lens (around 300mm is ideal), select a large aperture for a shallow depth of field and use a fast shutter speed, at least 1/500sec, to catch the reptile's tongue flicking out.



#### Use foreground interest

Composing a picture with a strong element in the foreground gives the viewer an interesting starting point: somewhere to begin before exploring the view beyond. What's more, the difference in scale between foreground and background elements gives a feeling of depth – this is especially effective with a wideangle lens. One of the main characteristics of wideangle lenses is that they exaggerate the size of elements close to the lens while reducing the size of distant objects, which emphasises the sense of depth you are looking to convey.

Choose your foreground with care – look for something sympathetic with the view. The dunes at Studland Bay are ideal for using as foreground interest. The trick is to make the foreground element prominent without allowing it to overpower the rest of the image.



#### KIT LIST



#### ▲ Panasonic LUMIX G9

The free-angle display screen on the G9 makes getting low for reptile shots easier, and the weather sealing will keep the dust out while you're down low.



#### ▲ Panasonic Leica DG Vario 8-18mm f/2.8-4

The wide angle (16-36mm 35mm equiv) and incredible resolution of this Leica lens make it an ideal choice for obtaining the most out of foreground interest.



#### ▲ Panasonic Leica DG Elmarit 200mm f/2.8

With a fast maximum aperture, image stabilisation and 400mm (35mm equiv.) focal length, this telephoto lens is ideal for photographing reptiles.



#### Panasonic LUMIX G X Vario 12-35mm f/2.8 II

The 24-70mm (35mm equiv.) range of this standard zoom lens is particularly useful for coastal landscapes.





# Join Panasonic LUMIX

# and AP at Studland in Dorset

#### Come along between 10-4pm on 9/10 June

AS PART of its long-standing relationship as official photography partner for the National Trust, Panasonic will be holding events around a variety of stunning National Trust locations over the coming months. The Panasonic LUMIX team and AP will be at Studland Bay in Dorset on 9/10 June.

Studland is a glorious stretch of natural coastline, with a four-mile long sandy beach, and views out towards Old Harry Rocks and the Isle of Wight. The heathland behind the beach is a haven for wildlife and features designated trails with the possibility of spotting all six British reptile species: adder, grass snake, smooth snake, common lizard, sand lizard and slowworm.

On the weekend of 9/10 June Panasonic LUMIX will be offering visitors to Studland Bay the chance to try its latest cameras and lenses, and take advantage of expert advice. Normal photo restrictions apply – see page 32 for details.

To find out more, visit www. nationaltrust.org.uk/studland or phone 01929 450500.



#### How to get there

- **By car:** B3351 from Corfe Castle and Swanage, or via the chain ferry from Sandbanks in Poole. Opening times for the car park can be found on the National Trust website.
- **By rail:** Branksome or Parkstone, both 3½ miles to Shell Bay (via vehicle ferry), or Wareham 12 miles.
- **By bus:** Wilts & Dorset number 50 from Bournemouth and Poole or Swanage.



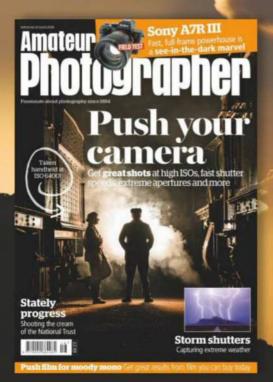
#### Other events coming up

The Panasonic LUMIX Roadshow, in partnership with the National Trust, will be touring various places this year (see below), and AP will feature articles with tips for shooting some of these beautiful locations. See nationaltrust.org.uk/panasonic-roadshows.

Fountain's Abbey	North Yorkshire	16/17 June
Bodiam Castle	East Sussex	23/24 June
Lacock	Wiltshire	30 June/1 July
Knole	Kent	7/8 July
Mount Stewart	NI	18/19 August
Giant's Causeway	NI	1/2 September
Dunham Massey	Cheshire	8/9 September

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# Here's the 1000 Here's the

This year's winning images at the **World Press Photo** competition are a mix of the shocking, upsetting, amazing and uplifting. We bring you a selection

orld Press Photo is recognised as the Oscars of photojournalism.
Every year, in Amsterdam, many of the world's premier news and documentary photographers come together to share their own photo stories with each other and the wider world. Categories range from Spot News to Contemporary

Issues, Environment, Sports, and Nature, and in each category there are awards for the best single image and best story. This year AP was at the awards and talked to some of the winners, and over the coming months we'll be featuring interviews and extended photo stories with some of them. But in the meantime here's a selection of some of the outstanding images.





#### Richard Tsong-Taatarii, USA

2nd prize. General News (singles)

In this image, from a story on the Black Lives Matter movement, John Thompson is embraced in St Anthony Village, Minnesota, USA, after speaking out at a memorial rally for his close friend Philando Castile, two days after he was shot dead by police in highly controversial circumstances.

Leica SL (Typ 601), 1/640sec at ISO 100



Photo of the Year and 1st Prize, Spot News

José Víctor Salazar Balza, 28, catches fire amid violent clashes with riot police during a protest against President Nicolás Maduro in Caracas, Venezuela. Nikon D4S, 24-70mm f/2.8 at 24mm, 1/800sec at f/7.1, ISO 400



### Kadir van Lohuizen, The Netherlands

1st prize, Environment (stories)

According to research by the World Bank, humans generate 3.5 million tonnes of solid waste a day – 10 times the amount a century ago. Landfills and waste dumps are filling up, and the World Economic Forum says by 2050, there will be so much plastic in the world's oceans that it will outweigh the fish. This image depicts a garbage truck arriving at Olusosun landfill site, Lagos, Nigeria. Nikon Df, 16-35mm

### Oliver Scarff, United Kingdom

1st prize,

Sports (singles)

Members of opposing teams, the Up'ards and Down'ards, grapple for the ball during the historic, annual Royal Shrovetide Football Match in Ashbourne, Derbyshire. The game is played between hundreds of participants in two eight-hour periods on Shrove Tuesday and Ash Wednesday. The two teams are determined by which side of the River Henmore players are born. Nikon D4, 70-200mm f/2.8 at 90mm.



1/800sec at f/4, ISO 1600



### Neil Aldridge, South Africa 1st prize,

Environment (singles)
A young southern white rhinoceros, drugged and blindfolded, is about to be released into the wild in Okavango Delta, Botswana, after relocation from South Africa for protection from poachers. Canon EOS 5D Mark II, EF 16-35mm f/2.8L at 16mm, 1/100sec at f/8, ISO 500

## **Javier Arcenillas, Spain** 3rd prize, Long-term Projects

Part of a project about drugs and violence in Latin America, this image depicts the crime scene in the upscale Zona Viva district of Guatemala City after 31-year-old Karina Marlene had been gunned down by six shots fired from a taxi.

Canon EOS 5D Mark II, EF 24-70mm f/2.8







### Ryan Kelly, USA

2nd prize, Spot News (singles)

People are thrown into the air as a car ploughs into a group of protesters demonstrating against a Unite the Right rally in Charlottesville, Virginia. The white nationalist rally opposed city plans to remove a statue of confederate icon General Robert E Lee. The attack, by James Alex Fields Jr, killed Heather Heyer, 32, and injured 19 others.

Canon EOS-1DX Mark II, 70-200mm f/2.8L at 200mm, 1/640sec at f/4, ISO 200

### Alessio Mamo, Italy

2nd prize, People (singles)

This picture is part of a project on the civilian casualties of war who are treated by the Médecins Sans Frontières Reconstructive Surgery Program at Al-Mowasah Hospital in Amman, Jordan. Here, 11-year-old Manal, a victim of a missile explosion in Kirkuk, Iraq, has to wear a mask for several hours a day to protect her face following extensive plastic surgery. Canon EOS 5D Mark III, 85mm f/1.4 at 85mm, 1/500sec at f/2.0, ISO 500





### **David Becker, USA**

1st prize, Spot News (stories)

Fifty-eight people were killed and more than 500 wounded when gunman Stephen Paddock opened fire on a crowd of around 22,000 concertgoers at a country music festival at Mandalay Bay Resort and Casino, Las Vegas. This is one of a series of powerful images of the attack that won David the Spot News (Stories) category.

Nikon D4S, 24-70mm f/2.8 at 42mm, 1/80sec at f/2.8, ISO 10,000

### **ABOUT WORLD PRESS PHOTO**

In 1955 a group of Dutch photographers organised an international contest to expose their work to a global audience. Since then World Press Photo has grown into the world's most prestigious photography competition. Sponsored by Canon for the past 26 years, the winner of Photo of the Year receives a prize of €10,000 plus Canon equipment. An exhibition of the winning photographs travels to 45 countries and is seen by more than four million people each year. To learn more, visit www.worldpressphoto.org.

### Testbench CAMERA TEST



## Panasonic Lumix DC-TZ200

The best travel camera just got better, says **Andy Westlake**, although enthusiasts might still find it frustrating



### For and against

Great zoom range for such a small camera



Very respectable image quality



Good-sized, very usable



Considerably improved grip

electronic viewfinder



compared to TZ100



Effective image stabilisation for low-light shooting



Lacklustre out-of-camera JPEG image quality



Rear screen doesn't tilt



Control layout is poor for eye-level shooting

Slow maximum-aperture zoom is noticeably soft at telephoto

### Data file

Sensor Output size

Shutter speeds

Sensitivity

Exposure modes Metering

Exposure comp Cont. shooting

Screen Viewfinder

AF points Video External mic

Memory card Power Battery life Dimensions Weight

20.1MP 1in CMOS

5472 x 3648

Focal length mag 2.7x

24-360mm equiv f/3.3-6.4 60-1/2000sec (mechanical),

1-16,000sec (electronic) ISO 200-12,800 (standard), ISO 80-25,600 (extended)

PASM, iAuto, Scene, Panorama Intelligent Multiple, Center Weighted, Spot

+/- 5EV in 1/3 EV steps

1.24-million-dot 3in touchscreen 2.33-million-dot equivalent LCD, 0.53x magnification

4K (3840 x 2160), 30fps SD. SDHC. SDXC DMW-BLG10E

111.2x66.4x45.2mm

anasonic originally invented the 'travel zoom' camera class by combining a long zoom lens with a pocketable body. Two years ago it revolutionised the category with its Lumix TZ100, which used a relatively large 20.1 MP 1 in sensor for vastly improved image quality, teamed up with a 10x zoom lens and a small electronic viewfinder. It's been my favourite pocket camera ever since.

20.1-million-pixel, 1in sensor

• 24-360mm equivalent f/3.3-6.4 lens 2.33m-dot LCD EVF • 1.24m-dot 3in touchscreen 4K video recording

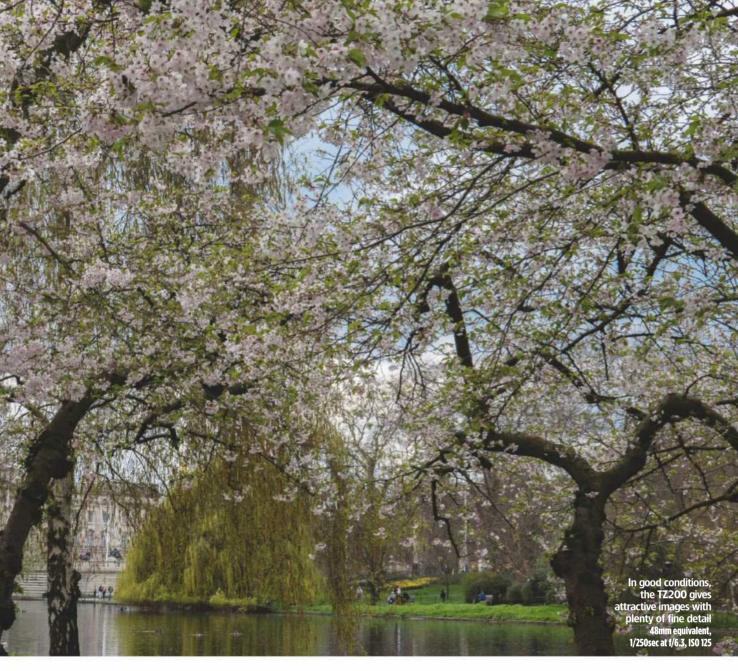
 Bluetooth and Wi-Fi connectivity

> Now the firm has taken the concept up another notch, by squeezing in two major upgrades without noticeably increasing the size. First is the lens, which is now a 15x, 24-360mm-equivalent zoom in place of the TZ100's 25-250mm. Second is a vastly improved electronic viewfinder. which, in contrast to the TZ100's, is good enough to use routinely.

With these updates, the price takes a considerable hike, up to £729 compared to around £510 for the TZ100 (which will remain on sale). While the TZ200 is far from being the most expensive compact camera on the market, with the Sony Cyber-shot RX100 V costing £849 and the Canon PowerShot G1 X Mark III priced £1,089, this still feels like a lot of money for this kind of camera. Let's see whether it's worth it.

### **Features**

The TZ200's headline feature is its 24-360mm lens, which is easily the longest on any pocket camera with a 1in sensor. Its extended reach has been made possible by the adoption of a completely new 13-element, 11-group optical design, and brings the TZ200 somewhat closer to the zoom ranges offered by cheaper long-zoom compacts with smaller sensors and inferior image quality. In return, the maximum aperture



has dropped, but only by about half a stop, to f/3.3-6.4 (from f/2.8-5.9). The minimum aperture at all focal lengths is f/8, which is perfectly sensible to avoid excessive diffraction softening with a 1in sensor, but means you have precious little adjustment range at the long end of the zoom.

Naturally, optical image stabilisation is built-in, which goes a long way towards making this small-aperture superzoom usable without always having to raise the ISO to avoid camera shake. To further cement the camera's credentials as an all-rounder, the lens is capable of focusing on subjects just 3cm from the front element, although only when it's set to the wideangle position.

Images are recorded using a 20.1-million-pixel 1in sensor, similar to those used in most enthusiast compacts these days. It supports a standard sensitivity

range of ISO 200-25,600, which is expandable to ISO 80-25,600. Images can be shot at up to 10 frames per second at full resolution, or 7fps with live view between frames. I was able to shoot 20 raw images before the camera slowed down, and at least 50 JPEGs, which is a good showing for a pocket camera.

Panasonic's handy 4K Photo mode is also onboard, and uses video technology to record 8MP images at 30fps without instantly filling up your memory card. The camera can even suggest the best shots in a burst, and generate composites in–camera from several selected frames.

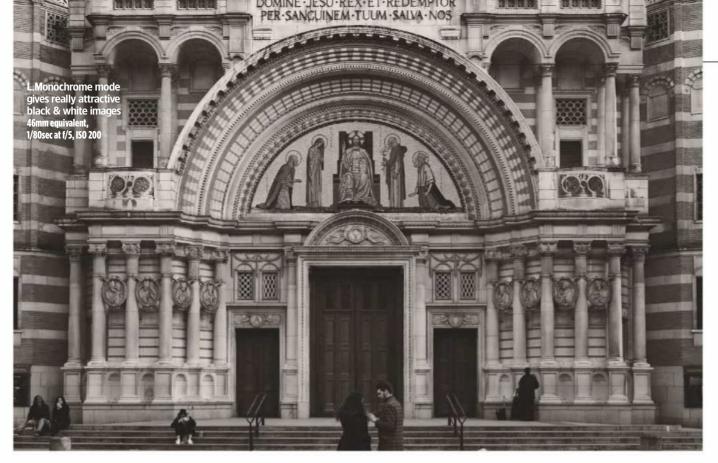
Indeed, Panasonic has crammed in a huge selection of modes and features. In addition to the PASM modes favoured by enthusiasts, there's Panasonic's point-andshoot Intelligent Auto mode for casual users, an auto-stitching panorama mode, an array of subject-specific scene modes, and Creative Control image-processing filters. Delve into the menus and you'll find an intervalometer for time-lapse shooting, together with modes for multiple-exposure shooting and even stop-motion animation. There's barely anything the TZ200 won't do.

Photographers who like to shoot in-camera black & white will be pleased by the inclusion of the attractive L.Monochrome mode, which is specifically designed for rich gradation and strong blacks, to give a look that's designed to resemble classic monochrome film. For those who prefer to manipulate their images after shooting them, in-camera raw conversion is available so you can tweak your images without having to get to a computer.

In terms of power, the DMW-BLG10 battery is rated for 370

images when shooting with the LCD, or 250 images with the electronic viewfinder. Engaging Eco mode extends the latter to 350 images. USB charging is built-in, meaning the camera can be kept topped-up using a portable powerbank. This is hugely convenient when you're travelling and exploring a new city.

When it comes to sharing your images, Panasonic has added Bluetooth to provide a full-time connection to your smartphone, complementing the existing Wi-Fi system that was in the TZ100. While some other manufacturers don't do very much with Bluetooth, Panasonic implements it pretty well. For example, you can use your smartphone as a basic remote shutter release, which is great for when you're shooting on a tripod. You can also use the Bluetooth connection to fire up the Wi-Fi for browsing



through your images, even if the camera is switched off. So you don't even have to take the TZ200 out of your bag or pocket to copy and share the images you've taken.

As with other Panasonic models, the TZ200 can record 4K video (3840x2160 pixels) at 30fps. Alternatively, you can shoot in Full HD, including 120fps slow-motion recording. Both resolutions come with field-of-view crops, of 1.2x for Full HD and 1.4x for 4K. This means it's wise to use the dedicated movie position on the exposure-mode dial, as this previews the framing you'll be getting before you start recording. You get full manual control over exposure if you want it, and can change exposure settings or pull focus from one subject to another using the touchscreen while recording. Built-in stereo microphones provide the sound. but as is usual for this kind of small camera, there's no option to plug in an external mic.

### **Build and handling**

In terms of design, the TZ200 is near-identical to its predecessor, with a solid-feeling metal body shell bringing a real impression of quality. One very welcome update, though, is the addition of a textured, rubberised strip onto the front of the handgrip, along with a small rubber thumbpad on the back. So unlike the slippery-

as-soap TZ100, the new model feels secure in your grasp, even if you shoot one-handed. I'd still recommend using a wriststrap, as you don't want to risk dropping a £729 camera.

The control layout is essentially the same, too, with a large, smoothly rotating control ring around the lens and a second dial on the top plate for changing exposure settings. But out of the box, the logic of how the dials are set up is somewhat incoherent. The top dial changes exposure settings in the PASM modes, but image-processing settings in the Creative Control and panorama modes, while in the iA or SCN modes it does nothing at all. Most of the time, the lens ring does exactly the same thing, but in iA it becomes a stepped zoom control. However you can customise the function of both dials if you prefer.

An array of buttons on the back of the camera gives access to exposure compensation, white balance, drive mode, focus mode, and Panasonic's 4K Photo and 4K Post Focus modes. All of the buttons are very small, and the last two are completely flush to the body. While this means you're less likely to press them by accident, it also makes them very difficult to find when you're using the viewfinder. Oddly, there's no ISO button; presumably you're supposed to leave the camera set to Auto ISO all the time.

By default, the zoom is operated using a conventional lever around the shutter button, but it turns out to be rather twitchy, with a small movement causing the zoom to jump substantially. This can make it difficult to set really precise composition. One workaround is to assign zoom to the lens ring, which gives you much more nuanced control. This might sound like you're wasting a control point, but the lens ring otherwise spends so much time merely replicating the top dial that it's no great loss.

To select the autofocus point, you're expected to use the touchscreen, including when you're shooting with the viewfinder. This should work perfectly well for most users, unless like me you happen to be left-eye dominant, in which case you'll probably end up with the focus area jumping around whenever your nose contacts the screen. You can turn touchpad AF off if you prefer, but then you end up with no quick way of setting the focus point when using the viewfinder.

To get around this, I reconfigured the Fn2 button that's placed below the thumb grip to 'Focus Area Set' instead of its usual 4K Post Focus mode (which I have no use for anyway). But even this isn't totally satisfactory, given that this button is rather difficult to locate by touch.

Overall the TZ200 works OK if you think of it as a point-and-

shoot that offers manual override when you need it. But it's pretty clunky if you like to change settings on a shot-by-shot basis.

Compared to a really well-set-up camera such as the Canon PowerShot G1 X Mark III, it's downright slow and annoying to shoot with, especially when you're using the viewfinder. To be fair, with this camera, your main creative settings are zoom and exposure compensation, both of which are easy to enough to change.



### Viewfinder and screen

One of the T7200's crucial improvements is its larger and much higher-resolution 2.33m-dot electronic viewfinder. which provides 0.53x equivalent magnification. This still isn't huge compared to most other cameras, but is vastly better than the TZ100's 'postage stamp at the end of a tunnel 1.16m-dot, 0.46x version. It's smaller than the 2.36m-dot EVF used by Sony in its RX100 V pocket camera, but has the considerable advantage that you don't have to pop it up every time you want to use it.

The LCD uses a field-sequential design, which displays red, green and blue images in rapid succession to trick the eye into seeing a full-colour image. Older versions of this technology could be disconcerting, giving primarycoloured 'tearing' artefacts when panning the camera, but the TZ200's refresh rate is high enough for this effect to be practically invisible except in extreme situations. As a result, I was quite happy to shoot with the EVF as a matter of course.

On the back is a 1.24-milliondot 3in touchscreen, which can be used for changing settings and browsing through your images. It's very good indeed, being bright, detailed, and colour-accurate, with superb touch response. A sensor beside the eyepiece enables automatic switchover from the LCD to the EVF when

you lift the camera up to your eye, and unlike many other cameras. its sensitivity is pretty much perfectly judged, so the screen doesn't switch off annoyingly when you don't want it to.

As with the TZ100, the screen is fixed in place to keep the size down. I'd have loved Panasonic to have made it tilt up and down, as this lets you not only hold the camera more steadily but also shoot more discreetly. But equally, I can understand the firm's thinking that it wants to keep the camera as slimline and pocketable as possible.

### **Autofocus**

As with other Panasonic cameras. the TZ200 employs the firm's Depth from Defocus system, which uses knowledge of the lens's out-of-focus characteristics to enable rapid autofocus. There's a huge array of focus modes to choose from; you can select the AF area yourself or let the camera choose the subject automatically. including with face and eyedetection, and you can get the camera to track a subject as it moves around the frame.

On the whole, the AF works exceptionally well, and in good light, focusing is essentially instantaneous. It continues to work remarkably well in low-light conditions too, where other cameras can sometimes struggle. The TZ200 can even make a decent attempt at tracking

# Panasonic's JPEGs give accurate colours that en't overly saturated 1/160sec at f/6.3, ISO 125

### **Focal points**

With its long zoom range and compact body, the Lumix TZ200 is the ultimate high-end travel camera

### Customisability

Most of the external controls can be reconfigured to suit vour requirements, including both dials and three Fn huttons. There are also five. on-screen Fn buttons, and a customisable O Menu

### 4K Photo

Panasonic's handy 4K Photo mode gets its own button, allowing you to record 8MP stills at 30fps. It even has a pre-burst mode that records footage from a second before and after you press the shutter button



### **EVF**

The corner-mounted viewfinder has both dioptre adjustment and an eye sensor, but the surround is hard plastic rather than rubberised.

### Flash

If you need a bit more light, the small flash unit pops up from the top, released by a sliding switch on the back.

### Connectors

On the side of the handgrip you'll find micro-USB and micro-HDMI outputs.





a moving subject and readjusting focus while shooting at 7fps. It's not going to match a DSLR, of course, but the only pocket camera likely to do better is the Sony RX100 V, and its 24-70mm equivalent zoom is pretty useless for action work.

If you need to use manual focus, the TZ200 is well set up, too.

Switch to MF and the lens ring is used for focusing: rotating it brings up a magnified view, selectable from 3x to 10x using the top dial. Having a completely usable EVF is a big advantage here, making it much easier to judge accurate focus. Alternatively, you can enable a peaking display with a choice of

colours and strengths. I barely found any need to use manual focus, as the AF is so reliable, but it's always good to have the option.

### **Performance**

We've become used to Lumix cameras being quick and responsive, and the TZ200 doesn't disappoint. Indeed, in pretty much every aspect of its operation it works really well. Crucially for a travel camera that's likely to get handed to non-expert users, I found it to be very reliable when shooting in its fully automatic iA mode, consistently giving sharp, well-exposed images. About the only time when it perceptibly slows

down is when you switch to some of the more processor-intensive Creative Control filters.

Image quality is, on the whole, pretty good, especially when shooting during the daytime. Naturally there are some compromises to be made with that huge zoom range, with images being noticeably less detailed towards the long end of the zoom.

A lot of this is simply down to physics; beyond about 100mm equivalent, the maximum aperture drops below f/5.6, which is equivalent to f/15 in full-frame terms, making it well into diffraction territory. This means images will inevitably appear

somewhat soft when viewed at the pixel level, although they'll still look fine at smaller print or display sizes. Close inspection of the camera's JPEG files reveals some fairly aggressive sharpening from Panasonic to make up for this.

Browsing through my images confirmed that the metering generally worked well, and I rarely had to apply exposure compensation except for creative purposes, for example, to make night-time shoots look dark. Out-of-camera JPEGs show accurate and vibrant colours in sunny conditions, but in stereotypical Panasonic fashion, the camera can struggle with auto white balance, with slight colour casts resulting in less attractive images compared to other brands. Unfortunately, the TZ200 doesn't appear to benefit from the improved colour science Panasonic has introduced in its latest mirrorless models such as the GX9. This means that on the whole, you'll get noticeably better results from post-processing raw files.

However, I was very pleased with the TZ200's output when shooting monochrome. With the L.Monochrome Photo Style in PASM modes, and several creative filters including the high-contrast Dynamic Monochrome, the camera gives a decent choice of looks for black & white shooting, a bit like having multiple film stocks at your disposal.



### Lab results

Andrew Sydenham's lab tests reveal just how the camera performs

Our cameras and lenses are tested using the industrystandard Image Engineering IQ-Analyser software. Visit www.image-engineering.de for more details





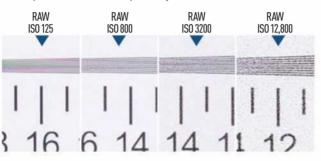
With the TZ200 using essentially the same sensor as the TZ100 before it (and indeed many other enthusiast compacts), its image quality is pretty predictable. It gives very good results at low ISOs, but quickly starts to show the effects of noise as the sensitivity is raised. Panasonic's JPEG output smears away all fine detail from ISO 800 and above, making this a camera that benefits greatly from shooting in raw if maximum detail is desired. This is compounded by the small–aperture zoom, which means you have to engage higher ISOs more quickly in marginal light.

### Resolution

Panasonic's JPEG processing aims to eliminate imagesampling artefacts, resulting in little more than 3,000 lines per picture height at ISO 125. In processed raw files, false-colour and aliasing at frequencies finer than 3,200 l/ph betray the lack of an optical low-pass filter. These effects are swamped by noise at ISO 800, where resolution drops below 3,000 l/ph; at higher settings it decreases monotonously. Our tests were shot at around 50mm equivalent and f/4.4: at longer settings and smaller apertures you'll see lower resolution.



On the right we show details from our resolution chart test pattern (above). Multiply the number beneath the lines by 200 to give the resolution in lines per picture height.



### **Noise**



The crops shown below are taken from the area outlined above in red

Looking at raw files processed using Adobe Camera Raw, the TZ200 gives excellent results at low ISOs, rendering plenty of fine detail. Speckles of luminance noise become obvious at ISO 400 when viewing at the pixel level, but this is unlikely to show up in prints. By the time you reach ISO 1600, however, image quality has decreased substantially, with colour desaturating and fine detail swamped by noise. ISO 3200 is probably the highest setting I'd use. Panasonic's JPEG processing aggressively smears away noise but does a good job of retaining colour, which looks bad close-up on screen but makes sense for sharing images via social media, or making small prints.





RAW ISO 3200



RAW ISO 400



RAW ISO 6400



**RAW ISO 1600** 



RAW ISO 12,800



### Verdict



In essence, the TZ200 is pretty simple to assess. If you want a pocketable camera with a long zoom range and decent image quality, it's the best you can buy right now. It takes the TZ100's successful template and improves it in several key ways, most importantly the larger, clearer viewfinder, longer zoom range, and much-improved handgrip. This arguably makes it the best travel camera available, if you can stomach the £729 price tag.

However, along with understanding what the TZ200 is, it's also crucial to appreciate what it isn't. This camera really isn't a direct competitor for 'enthusiast compacts' with short zooms and large maximum apertures, exemplified by the Sony Cyber-shot RX100 V or Panasonic's own LX15. Such cameras promise better low-light performance, along with the ability to take a degree of control over depth of field. The TZ200 is a rather different tool, in that its creative potential is offered mainly by that long zoom lens. Its clunky control layout doesn't really encourage experimentation with exposure settings, either. Because of this, there can be a perception that this isn't the right kind of camera for 'serious' photographers, but I disagree; it's purely down to personal needs.

Despite the compromises inherent to its long-zoom design, the TZ200 generally delivers pleasing images, especially if you mainly shoot in daylight. But it also offers useful low-light capability, thanks to its image stabilisation, as long as you can live with slow shutter speeds and the concomitant risk of motion blur. However, its JPEG output is a little insipid, so images will benefit from colour and saturation adjustments; you'll get best results from processing raw.

The TZ200 won't, for most users, replace a 'proper' camera. But if you want a pocket camera that can shoot almost anything pretty competently, and which you can pass to friends and family and be confident of getting good results, it's a great choice.

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	IMAGE QUALITY	8
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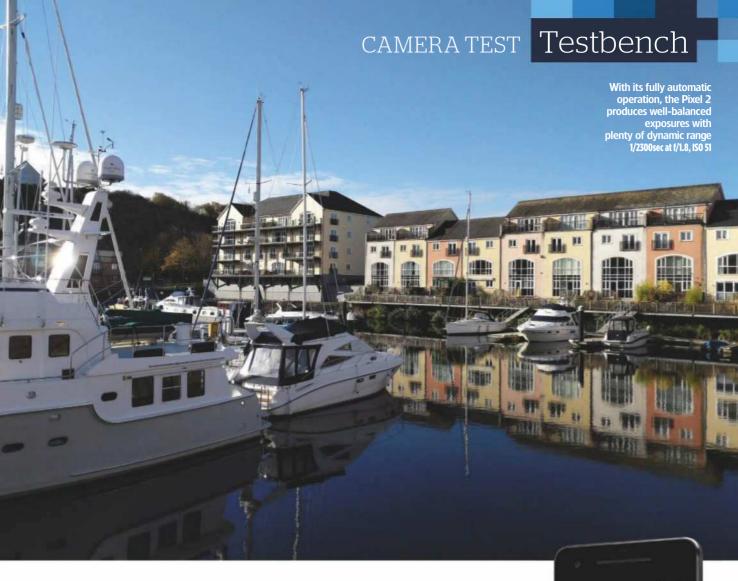
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# Google Pixel 2

It may appear simple on the outside, says **Amy Davies**, but underneath, the Google Pixel 2 hides a powerful smartphone camera that's worthy of your attention

he quality of a smartphone's camera is often the prime consideration when it comes to choosing which one to buy. For many, they do a fine job of capturing your everyday memories, holidays and family pictures.

However, they're also becoming increasingly important to serious photographers – after all, the best camera is the one you have with you. The original Pixel, launched in 2016, was an impressive performer, and enough of a contender to take on the might of the ubiquitous iPhone.

The Pixel 2 was launched at the end of 2017, with two variations to choose from. There's the smaller Pixel 2, with a 5in AMOLED

screen, or the larger Pixel 2 XL, with a 6in pOLED screen. Again, as a point of difference from other brands, the camera set-up is the same no matter which size you plump for - so you get a 12.2MP rear camera. A new feature for the Pixel 2 is the use of Gorilla Glass for the screen, making it more scratch-resistant than its predecessor, as well as promising better colour accuracy. Other upgrades include a faster processor, a faster fingerprint sensor, and IP67 dust and waterproofing.

The camera, which at the time of the Pixel 2's release was lauded as the best ever camera phone by DxOMark, with an unprecedented score of 98,

sees some incremental upgrades, thanks to a combination of software and hardware improvements. The Pixel 2 has since been beaten by the Samsung S9+(99), Huawei P20 (102) and Huawei P20 Pro (109), but remains one point ahead of its biggest rival, the iPhone X (97).

There's a faster lens (f/1.8, compared with the f/2 of the original Pixel), the addition of optical image stabilisation, while the front camera has seen its resolution increase to 8MP (from seven). The really interesting feature however is Google's 'Portrait Mode', which requires just a single lens to work as it uses dual-pixel technology - see 'Portrait Mode' overleaf

### At a glance

### From £629

- Android smartphone
- 5in AMOLED screen
- 12.2MP rear camera, with f/1.8 lens

As with the original Pixel, one of the most appealing facets of this phone is that the company will grant you unlimited storage for your photos and videos via Google Photos until 2020 meaning should you fill up your phone, you can delete them from the device and access them via the cloud. After 2020, your photos and videos will be compressed to make space, so it's worth also keeping a separate backup of your content.

The outward design of the Pixel 2 is very similar to the original, and is arguably rather plain - some will like its simple no-frills approach. while others may prefer something with just a little more flair. If you go for the smaller, standard Pixel, you'll likely find it sits neatly in your pocket and is also easy to use one-handed. The larger Pixel 2 XL is a little more unwieldy and will

### 'In essence, portrait mode enables the capture of shallow depth-of-field images'

more than likely require the use of a second hand to steady it for the most comfortable experience.

Camera app and features Some native smartphone camera

apps are surprisingly sophisticated, while others prefer to keep things as simple as possible. Similar to the iPhone X, you don't get a whole lot of settings to work with when using the Pixel 2.

At the top of the app you'll see a few options (or to the left if shooting in landscape format). Notable by its absence is any kind of 'Pro' or 'Advanced' mode, so don't expect to be able to take control of ISO, metering or shutter speed. Curiously, however, you can adjust white balance with a quick

tap on a thermometer-like icon. Also available from this set of options is 'Motion' - basically a mode that records a couple of seconds of video with your still images. There's a flash which can be set to on, off or auto, while a timer option gives you the choice between three and 10 seconds.

Tap the icon that looks like three lines, and you'll be able to choose between the small selection of camera modes. Other than the default shooting mode, vou've got Slow Motion (video), Panorama, Photo Sphere, Portrait and AR Stickers. The one you're likely to actually use with any regularity is the Portrait mode. In essence, this enables the capture of shallow depth-of-field effect images. Despite its name, you can of course use it for other subjects.

Once the camera is pointing at your subject, it can be helpful to tap the screen to prompt the camera to focus on the correct area (it usually gets it right, but occasionally chooses something in the background while in this mode). Head to playback to see the effect created - you'll be able to revert to a 'standard' shot if it hasn't come out well.

A few additional settings can be accessed from the main camera, including switching on a grid to aid with composition and choosing an alternative resolution to the standard 12.2MP (4:3 ratio). Hidden under an 'Advanced' tab, is the option to switch on HDR+ control. By default, the Pixel 2 is always shooting in HDR+



- but with this selected, you'll be able to turn it off from the main shooting screen.

### **Performance**

Autofocus is fast and reliable -I only occasionally needed to tap the screen to choose the correct

### **Portrait Mode**



A shallow depth-of-field effect is rendered convincingly 1/4700sec at f/1.8, ISO 58

ALMOST all current smartphones now feature some kind of shallow depth-of-field effect mode.

Since the majority of mobile phone cameras use small sensors with fixed-aperture lenses, they take pictures with pretty much everything in focus. Many smartphone cameras that create fake bokeh do so by using more than one camera - taking two photos at the same time and matching the data in each to judge where the blur should be applied.

The Pixel 2 is different, because it can apply the same technique, despite the fact it has only one lens. It uses machine learning, combined with dual-pixel autofocusing, to estimate which pixels belong to the subject, and which belong to the background, as well as creating a depth map.

Google claims it has 'trained' the camera using almost one million pictures of people - so while you can still use it with other subjects, when the camera doesn't detect a face, it's not able to compare it with the photos in its archive. The depth-mapping feature works, though, which is why it can still produce relatively pleasing effects.



Portrait Mode also works well with non-human subjects 1/100sec at f/1.8, ISO 284



focus point. Exposure on the whole is also very well balanced, while automatic white balance does a decent job under a variety of lighting conditions – I rarely strayed from the automatic setting.

Detail when there's plenty of light is very good. If you examine

images at 100%, it's possible to see over sharpening. This is a crime that most smartphones are guilty of, but it does result in images that look great on a phone screen, or even printed at up to A4 size. Colours are kept on the right side of realistic while also



Colours are vibrant, but remain natural and realistic 1/120sec at f/1.8, ISO 62

managing to remain punchy and vibrant – leaving HDR+ switched on results in natural images for the most part.

The Pixel 2 is also an impressive performer in low light, with the f/1.8 lens helping to keep ISO to a minimum in the majority of situations. Again, it's advisable not to examine your images at pixel level, but generally the overall impression of detail in high ISO, low light scenarios is very good.

As for the much-lauded Portrait mode, what Google manages to achieve with software alone is really rather good. When you're looking at an image shot in this mode on a small(ish) screen, vou'd be forgiven for thinking a DSLR or CSC was involved in its production at first glance. Of course, as soon as you zoom in, you'll usually find slightly strange artefacts, while subjects with a complicated outline (such as flowers), don't always fare well - but for its intended use of portraits, it has a lot of merit.



### **Verdict**

GENERALLY speaking, smartphones tend to fall into two camps: simple but gets the job done, or more complicated and therefore more appealing to 'serious' photographers.

While the Pixel 2 falls into the former, it manages to appeal to enthusiasts by virtue of the fact that it takes such good photographs.

It may not have much pizazz, but the understated design belies something a lot more impressive underneath. Images are clean and well-exposed, even in low-light. The Portrait mode does what it says on the tin with aplomb, without the need for a second camera unit.

On the downside, not having a second camera means you don't get a zoom option, something the iPhone X, Samsung S9+ and Huawei P20 Pro all have (albeit in larger devices). There's also less flexibility than the P20 Pro and Samsung S9+, with no advanced mode, nor the ability to shoot in raw.

Still, if you're looking for a phone to double up as a point-and-shoot that produces consistently excellent photos, this simple device could be the one for you.

### Data file

	Google Pixel 2
Rear camera	2.2MP, f/1.8 lens
Front camera	8MP, f/2.4 lens
Display	5in: AMOLED Gorilla Glass 5, 1920x1080, 441ppi (Pixel 2); 6in: pOLED Gorilla Glass 5, 2880x1330, 538ppi (Pixel 2 XL)
Operating System	Android 8.0 Oreo with Google UI
Storage	64GB/128GB (inbuilt)
Dimensions	145.7x69.7x7.8mm (Pixel 2), 157.9x76.7x7.9mm (Pixel 2 XL)
Weight	143g (Pixel 2), 175g (Pixel 2 XL)

# Benro GD3WH geared head

### At a glance

- Three-way geared head
- 145x139x109mm
- Weighs 690g
- 6kg maximum load

Benro's new geared head leaves its competitors trailing, says **Andy Westlake** 

• £199 • www.benro.co.uk

While most serious photographers own a tripod, I suspect few use more than one head. Landscape photographers tend to prefer ball heads for their portability, while those who spend less time carrying their kit to location will likely prefer the convenience offered by three-way heads. But relatively few will have even heard of geared heads, which is a shame as they are the perfect choice for any application that demands precise adjustment, such as macro or architecture.

Until now, such heads have only really been offered by Manfrotto, aside from a few super-expensive alternatives. But now Benro has come up with an excellent design that for many will offer the best compromise between size, sturdiness and price.

The GD3WH uses a layout that's nearidentical to Manfrotto's geared heads featuring three large control knobs, one for each axis of movement. Rotating any one of them drives the camera directly in the corresponding direction, allowing highly accurate setting of composition. The head offers the usual 360° panning motion, along with 120° movement in the other two axes, which is enough for almost any situation. For quick and rough repositioning, or flipping the camera over to portrait format, the gearing can be disengaged using the adjacent star-shaped controls, which spring firmly back into place when released.

Not only is the Benro more compact than its closest competitors, it's lighter, too. Its magnesium-alloy construction also feels distinctly sturdier than Manfrotto's plastic XPRO geared head, and is lighter in weight than the aluminium Manfrotto 410 Junior geared head, which is rated to take a similar load.

Another advantage is that the quick release uses Arca Swiss-pattern dovetail plates, which are now a de facto standard. The screw-type clamp is especially well designed: partially undoing it frees the camera plate enough to reposition it, but not to release the camera entirely. For this, you have to pull the locking knob away from the head before you can undo it. It locks again with less than a full turn back, which makes attaching the camera unusually quick.

### **Verdict**

This may be Benro's first attempt at a geared head, but it's an excellent design that gets pretty much everything right. Camera adjustment is smooth and precise, with no hint of backlash, giving sufficient control that I could accurately aim long telephotos with ease. It's small and lightweight enough to carry with you to location, too. Quite simply, it's the new leader of its class



### Quick release

This works best with the supplied 70mm-long plate, but accepts other Arca Swiss-type dovetail plates, too.

### %inch socket

The head fits directly to tripods with standard %in screws, with a ¼in adapter included in the box.



Each axis of movement has a reference scale showing its current angle, marked in five-degree increments.

### Spirit levels

Three strategically placed bubble levels help keep your camera straight, for both landscape and portrait shooting.



### **ALSO CONSIDER**

If price is a serious concern, Manfrotto's £150 MHXPRO-3WG three-way head is well worth a look. But with its plastic construction, it's less sturdy than the Benro, with a maximum rated load of 4kg It's also larger and a little heavier, at 750g.



# TechSupport

**Email** your questions to: ap@timeinc.com, **Twitter** @AP\_Magazine and #AskAP, or **Facebook**. **Or write to** Technical Support, Amateur Photographer Magazine, Time Inc. (UK), Pinehurst 2, Pinehurst Road, Farnborough Business Park, Farnborough, Hants GU14 7BF



ColorMunki Display is for monitors

Printing profiles

After lots of deliberation, I purchased a monitor calibration tool (X-rite ColorMunki Display) to improve my printed images. I calibrated the monitor on my HP EliteOne 800 and now find myself at a loss as what to do next to get the perfect print. Could you advise on the settings to use when printing with my Epson Stylus Photo R1900 printer? Should I use Photoshop CC for colour management rather than my printer, and continue using the built-in specific paper ICC profiles or those created by ColorMunki during the calibration process and shown in the profiles list in Photoshop. My experiments suggest that the ColorMunki profile does not produce a print reflecting what is on the screen, whereas using previously loaded paper profiles do. Have I done something wrong, or has my considerable investment to improve prints been in vain? **Glyn Hopping** 

To ensure that the colours you print match those on your monitor, you need a display profile for your monitor and separate print profiles for the paper. In practice, the manufacturers' profiles for paper types are usually accurate enough to get excellent prints.

Your X-Rite ColorMunki Display is only for profiling your monitor. It doesn't make profiles for your printer or papers; to go this step further, you need the ColorMunki Photo system. Therefore, you should continue to use the paper profiles already on your system, as these are what translate the colour values of your image files correctly to print. In principle, you can use either Photoshop or your printer driver for colour management, and they should give similar results. The key is to ensure you never have both trying to manage colour at the same time, or you'll get odd results due to double-profiling. **Andy Westlake** 

100-400mm upgrade

I want to upgrade my old Canon 75–300mm f/4–5.6 IS USM telephoto zoom with a longer focal length lens to use with my Canon EOS 5D Mark III. Within my budget are the Canon 100–400mm f/4.5–5.6L IS USM, Sigma AF 100–400mm f/5–6.3 DG OS HSM and Tamron 100–400mm f/4.5–6.3 Di VC USD, but can't decide on one.

**Keith Potter** 

Having owned, used or reviewed the three lenses vou mention. I can answer your question, Keith. The Canon 100-400mm f/4.5-5.6 is an appealing option, but it's been superseded by a Mark-II version, so you could source a secondhand version (excellent condition lens costs about £700). The push-pull zoom mechanism, with its associated twist lock, can be prone to slipping though and it's reported that the pump action transfers dust to the inner lenses. I've had to get my lens serviced twice to resolve these issues.

The Sigma and Tamron lenses are brilliant optics, but Sigma hasn't equipped theirs with a tripod collar. If you'd like to mount your lens to a tripod I recommend choosing the Tamron. Bear in mind that you pay £200 more for the Tamron (with a tripod collar included).

Michael Topham

Lens for Sony Alpha 7 III

I currently own a Sony Alpha 65 with the 16–50mm f/2.8 SSM lens. I also have a Minolta 75–300mm Beercan and Minolta 35–70mm Macro lens. I really like the 16–50mm lens as it covers most of the photography I like to do – motorhome travel photos across Europe, family photos and a range of landscape and general interest photos. Often, lighting conditions are not ideal. The Minolta lenses are my backup.

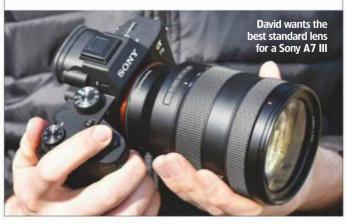
I want to upgrade to a Sony Alpha 7 III but after spending on the camera, I won't be able to afford a Sony f/2.8 zoom lens. Third-party f/2.8 lenses also seem expensive, but with their better ISO handling and dynamic range together with IS, the f/4 lenses look quite appealing to me. I would really like some advice on what would be a good alternative lens to pair with my camera. I'm not sure the kit lens available with the camera would be up to the standard of my Sony 16–50mm. Also, ultimately I will need to replace the other two lenses, so I want to get the best standard (non-prime) lens I can afford. One lens that I considered is the Tamron 28–75mm f/2.8 Di III RXD, priced around £700 (the ballpark of my affordability).

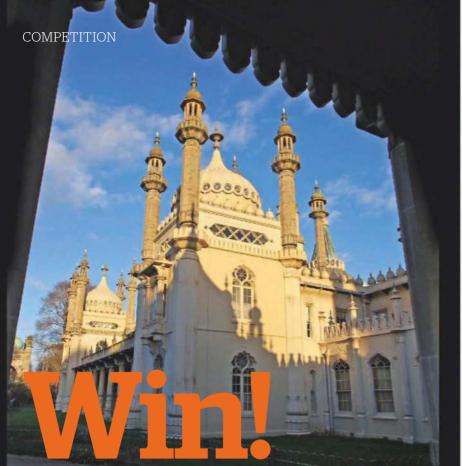
**David O'Doherty** 

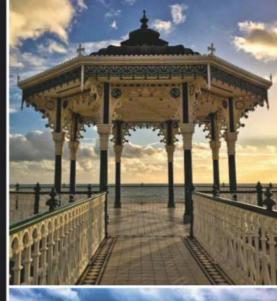
You're right to be sceptical about the FE 28-70mm f/3.5-5.6 OSS kit zoom: it would get you started, but has an underwhelming zoom and aperture range. The Tamron 28-75mm f/2.8 looks intriguing and well-priced, but is too new for us to recommend. Meanwhile the most-affordable Sony option is the 24-70mm f/4 OSS ZA (about £749). It's a decent lens, and almost equivalent to your 16-50mm f/2.8 in terms of zoom range. Its smaller f/4 aperture is offset by the larger full-frame format, so you get a similar degree of background blur when shooting wide open.

If you can stretch your budget, I recommend the Sony FE 24–105mm F4 G OSS, which costs £1,199. It combines a handy zoom range with superb optics and very effective IS. One cheaper option is to buy a Canon EF-mount Sigma 24–105mm f/4 DG OS HSM Art for £599, and use it with Sigma's MC-11 mount converter (£199). But you'd lose some handy autofocus modes, and end up with a bulkier set up.

**Andy Westlake** 









# A day out on a **Brighton** street photography walk

Wednesday, 13 June, 1-5pm Birdcage Bandstand Café, 147 Kings Rd, Brighton BN1 2PQ

Win a day out on a Brighton street photography walk with *Amateur Photographer* and Olympus

AP teamed up with Olympus back in March to give readers the chance to spend a day with the company's flagship camera – the OM–D E–M1 Mark II – on a photo walk around Brighton, and to try out some of the excellent lenses in the Olympus range. It was so popular we're doing it again.

Starting at the iconic Victorian Bandstand, our meeting point, you will enjoy the many photo opportunities that Brighton's seafront has to offer, from the rusting remains of the West Pier to the fairground fun of Brighton Palace Pier. We'll take in the magnificent Regency architecture, narrow walkways of the Lanes, Bohemian North Laine and, of course, the spectacular Royal Pavilion.

Your tour will be escorted by AP Editor and Brighton resident, Nigel Atherton, and you'll be shooting on top-of-the-line Olympus OM-D E-M1 Mark II cameras and the finest M.Zuiko lenses. Technical experts from Olympus will be

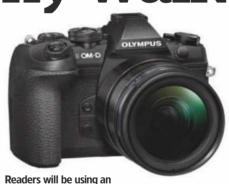
on hand to help you get to grips with the kit and answer any questions you may have. Tea, coffee and light snacks will also be provided.

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Before you enter, please note you must be free to attend the Olympus Brighton Photowalk on Wednesday, 13 June 2018, and be able to make your own way to Birdcage Bandstand Café, 147 Kings Road, Brighton, BN1 2PQ.

The closing date for entries is 30 May 2018

### Tech Talk



The Palekh Fed from the front

The Palekh design

continues around

the camera back

### **BLAST FROM THE PAST**

## The Palekh Fed

John Wade discovers a small work of Russian camera art

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**GUIDE PRICE NOW** £68 (recent auction price for Palekh version)

FED CAMERAS were made in a factory of the same name in the Ukraine. In 1934 they made the Fed-1, which was a copy of the Leica II, introduced in Germany two years before. In 1955 the Fed-2 updated the design a little and in 1961 the Fed-3 streamlined it even more. That's where this camera originated: it's actually a Fed-3, type B.

It's not unusual to see cameras of this type and era with different coloured bodies, the result of modifications by collectors in the UK. This one, however, was decorated in Russia, from where it was acquired.

The artwork on the body is called Palekh, named after a Russian town famed for icon painting, and where this type of miniature folk handicraft began in the 1920s. Palekh is carried out with tempera paint, depicting characters from fairy tales and songs in bright colours against black backgrounds in a smooth design with gold shading.

Usually Palekh is applied to papier-maché items like small



boxes. Here, the design has been printed onto fabric fitted precisely to the camera body, allowing for the lens, delayed action lever and release button.

As a usable camera, the Fed works fine with an interchangeable Industar-61 52mm f/2.8 lens, coupled rangefinder and focal plane shutter speeded

1-1/500sec. As a collector's item, cameras like this divide opinion.

Some will dismiss it because it was not originally produced in the Fed factory and therefore is not an 'official' camera. Others, delighted that the modification was made in Russia, see a rare and rather beautiful object that is probably a one-off. And if that's not collectable, what is?

What's good Unusual design, usable with 35mm film, takes Leica screw-fit lenses.

What's bad To avoid damage, film wind lever must be operated and shutter tensioned before setting a speed; fiddly film loading.



Even the lens cap has its own Palekh addition

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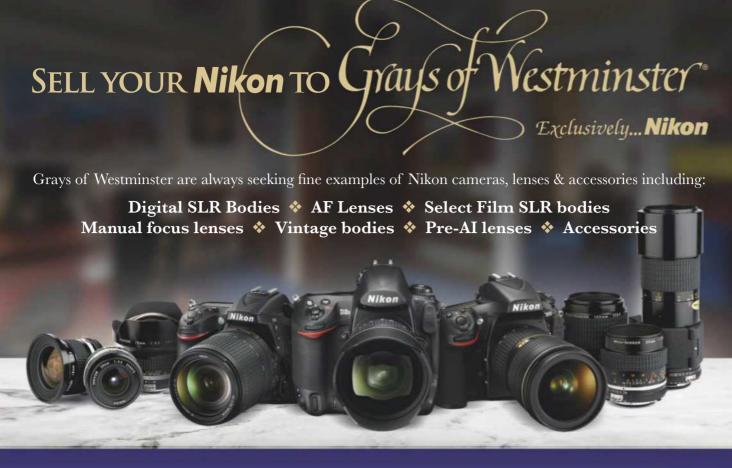
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FUJI 18 - 55mm f2.8/4-R LM OIS XF FUJINON + HOOD MINT- £375.0
FUJI 50- 230mm f4.5/6.7 OIS XC LENS FOR X PRO ETCMINT BOXED £245.0
FUJI TCL-X100 TELECONVERTER FOR X100/100S etcMINT BOXED £195.0
LEICA X VARIO TYPE 107 + HANDGRIP & FINGER LOOP .MINT BOXED £1,195.0
NIKON D3S BODY COMPLETEEXC++BOXED £995.0
NIKON D7000 BODY WITH BATT AND CHARGERMINT-BOXED £299.0
NIKON D300S BODY COMPLETE WITH ALL ACCESSORIES .MINT BOXED £375.0
NIKON D200 BODY WITH BATTERY, CHARGER, STRAPMINT-£199.0
NIKON D2 HS BODY COMPLETEEXC+++BOXED £375.0
NIKON D3000 COMPLETE WITH 18-55 AFS VR LENSMINT £175.0
NIKON D40 BODY COMPLETEMINT-BOXED £125.0 NIKON MB-D16 BATTERY GRIP FOR NIKON D750MINT BOXED £195.0
SIGMA EM-140 DG NA - ITTL MACRO FLASHMINT BOXED £25.0
SIGMA EN-140 DG NA - 111L MACKO PLASHMINT BOXED £225.0 SIGMA EF 610 DG SUPER FLASH NIKON FITMINT BOXED £95.0
SIGMA EF-510 DG SOPER FLASH NIKON FITMINT BOXED £95.0 SIGMA EF-530 DG ST ELECTRONIC FLASH ITTL NIKON FITMINT BOXED £75.0
PENTAX KP DIGITAL 24.2 MEGAPIXELS (USED ONCE)MINT BOXED £699.0
PENTAX 50mm f1.8 SMC DA LENS + HOODMINT BOXED £95.0
PENTAX 18 - 50mm f4/5.6 DC WR RE LENS + HOOD
PENTAX 15 - 300mm f4.5/6.3 DA PLM WR.+ HOODMINT BOXED £295.0
PANASONIC 45-200mm f4/5.6 LUMIX G VARIO M 4/3RDS.MINT BOXED £199.0
OLYMPUS 50mm F2 MACRO ZUIKO DIGITAL ED 4/3RDSMINT CASED £325.0
OLYMPUS 70 - 300mm f4/5.6 ZUIKO DIGITA ED 4/3rdsMINT BOXED £169.0
OLYMPUS 40 - 150mm F3.5/4.5 ZUIKO DIGTAL ED 4/3RDS.MINT + HOOD £69.0
OLYMPUS DIGITAL EX - 25 EXTENSION TUBE 25MMMINT £95.0
OLYMPUS FL-14 FLASH UNITMINT CASED £75.0
PANASONIC GF2 BODY COMPLETE WITH ALL ACCESSMINT BOXED £145.0
SONY 18 - 250mm f3.5/6.3 A/F DT LENSMINT BOXED £325.0
SIGMA 30mm F2.8 DN MICRO 4/3RDSMINT BOXED £115.0
SONY 20mm f2.8 WIDE ANGLE FOR ALPHAMINT BOXED £399.0
SONY 500mm f8 REFLEX LENS WITH FILTERSMINT BOXED £395.0
SONY ECM - XTST1M STEREO MICROPHONE NEW UNUSED £69.0
METZ 44A/F1 FLASH UNIT FOR SON DLSRMINT BOXED £95.0
SONY DSC-HX90V COMPLETE VERY LOW USEMINT BOXED £275.0
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Canon Autofocus, Digital Lenses,	Canon F	D
CANON 14mm f2.8 USM "L"	MINT-BOXED	£795.0
CANON 24mm f1.4 "L" USM	MINT	£499.0
CANON 24mm f1.4 "L" USMCANON 85mm f1.2 USM "L" MK II LATEST MODEL	.MINT CASED	£899.0
CANON 85mm f1.2 USM "L" MK II LATEST MODEL	AINT BOXED £	1.045.0
CANON 100mm f2.8 USM "L" MACRO IMAGE STABILIZEF	MINT BOXED	£525.0
CANON 300mm f4 USM "L" IMAGE STABILIZER., MINT BI	DXED AS NEW	£895.0
CANON 300mm f4 USM "L" IMAGE STABILIZER		
CANON 500mm f4 USM "L" IMAGE STABILIZER MK1 N	IINT-CASED £	2,999.0
CANON 8 - 15mm f4 USM "L" FISHEYE	.MINT CASED	£799.0
CANON 16 - 35mm f2.8 USM "L" MK 2	.MINT BOXED	£875.0
CANON 16 - 35mm f4 USM "L" LATEST	. MINT+HOOD	£699.0
CANON 28 - 70mm f2.8 USM "L"	MINT-	£495.0
CANON 28 - 80mm f2.8/4 USM "L"	EXC++CASED	£375.0
CANON 70 - 200mm f4 USM "L" IMAGE STABILIZER	.MINT CASED	£699.0
CANON 70 - 200mm f4 USM "L" IMAGE STABILIZER	.MINT BOXED	£795.0
CANON 70 - 200mm f2.8 USM "L"	.MINT BOXED	£699.0
CANON 80 - 200mm f2.8 "L" USM WITH HOOD		
CANON 20mm f2.8 USM	EXC++	£245.0
CANON 24mm f2.8 EF-S STM PANCAKE LENS	.MINT BOXED	£110.0
CANON 50mm f1.8 MARK 1 (VERY RARE NOW)	MINT	£129.0
CARL ZEISS 50mm f1.4 PLANNAR T* WITH HOOD	MINT	£375.0
CANON 60mm f2.8 EFS USM MACRO LENS	MINT-	£295.0
CANON 85mm f1.8 USM	MINT	£275.0
CANON 100mm f2 USM	MINT	£275.0
CANON 100mm f2 USM	EXC++	£215.0
CANON 100mm f2.8 MACRO	EXC++	£195.0
CANON 10 - 22mm f3.5/4.5 USM	EXC++	£345.0
CANON 17 - 55mm f2.8 EFS IS USM WITH HOOD	MINT	£499.0
CANON 18 - 55mm f3.3/5.6 STM VIBRATION REDUCTION.		
CANON 18 - 135mm f3.5/5.6 EF-S IMAGE STABILIZER		
CANON 18 - 200mm f3.5/5.6 EF-S IMAGE STABILIZER		
CANON 70 - 300mm f4.5/5.6 USM IMAGE STABILIZER	MINT	£285.0
CANON 70 - 300mm f4.5/5.6 USM IMAGE STABILIZER		
CANON 75 - 300mm f4.5/5.6 MKII USM	MIN	T £99.0
CANON 75 - 300mm f4.5/5.6 MKIII		
KENCO DG CANON FIT TUBE SET 12,20,36MM		
CANON EF 1.4X EXTENDER MK I		
CANON EF 2.0X EXTENDER MK I		
CANON EF 2.0X EXTENDER MK II	.MINT CASED	£185.0
KENCO DG CANON FIT TUBE SET 12,20,36MM	MINT	- £99.0
KENCO TELEPLUS PRO 300 DGX 1.4 TELECONVERTER		
SIGMA EX 1.4 APO DG TELECONVERTER		
CANON TC-80N3 REMOTE RELEASE/TIMER FOE EOS		
SIGMA 4.5mm f2.8 EX DC HSM CIRCULAR FISHEYE		
SIGMA 10mm f2.8 EX DC FISHEYE HSM		
SIGMA 14mm f2.8 EX HSM ASPHERIC		
SIGMA 105mm f2.8 MACRO EX WITH CASE		
SIGMA 105mm f2.8 MACRO EX DG OS HSM		
SIGMA 150mm f2.8 EX DG-OS HSM MACRO LATEST		
SIGMA 12 - 24mm f4.5/5.6 DG HSM MK2 II		
SIGMA 15 - 30mm f3.5/4.5 EX DG ASPHERIC	MINT-BOXED	£199.0

SIGMA 17 - 35mm f2.8/4 EX HSM APHERIC MINT- £179.00
SIGMA 18 - 50mm f 2.8 EX DC SLD GLASSMINT-BOXED £165.00
SIGMA 18 - 250mm f3.5/6.3 DC SLD HSM OSMINT BOXED £199.00
SIGMA 50 - 150mm f2.8 EX APO HSM AF-DC MK II MINT- £325.00
SIGMA 70 - 200mm f2.8 DG HSM OS LATESTMINT £595.00
SIGMA 120 - 400mm f4/5.6 APO DG HSM OSMINT BOXED £425.00
TAMRON 180mm f3.5 A/F SP DI MACRO LATESTMINT BOXED £499.00
TAMRON 500mm f8 MIRROR LENS & FILTERS FD MOUNT MINT-CASED £175.00
TAMRON 28 - 75mm f2.8 XR Di LENS LATESTMINT £345.00
TAMRON 28 - 300mm f3.5/6.3 I/F LD DI ASP VIB CONTROLMINT BOXED £375.00
TOKINA 10 -17mm f3.5/4.5 ATX DX FISHEYE (LATEST)MINT £299.00
TOKINA 11 - 16mm f2.8 ATX - PRO ASPHERICALMINT BOXED £279.00
LENSBABY COMPOSER WITH 0.42 SUPER WIDEMINT CASED £99.00
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### Contax 'G' Compacts & SLR & Ricoh

CONTAX 28mm f2.8 BIOGON "G" HOOD, FILTER CAP BL MINT CASED £299.00
CONTAX 35 - 70mm f3.5/5.6 "G" VARIO-SONNAR T*MINT BOXED £395.00
CONTAX TLA 140 FLASH FOR G1/G2MINT CASED £65.00
CONTAX GD1 DATABACK FOR CONTAX T3MINT-BOXED £69.00
CONTAX TLA 200 FLAH FOR CONTAX "G"MINT CASED £99.00
CONTAX TVS WITH VARIO SONNARMINT BOXED £199.00
CONTAX 167 MT BLACK BODYMINT BOXED £175.00
CONTAX 167 MT BLACK BODYEXC++ £149.00
CONTAX 137 MA QUARTX BODYMINT BOXED £85.00
CONTAX 137 MA QUARTX BODYEXC++ £49.00
YASHICA ML CONTAX FIT 28mm f2.8MINT £99.00
CONTAX 50mm f1.7 AE LENSMINT £95.00
YASHICA/CONTAX 55mm f2.8 ML MACRO LENSMINT £175.00
CONTAX CARL ZEISS 85mm f2.8 AEMINT BOXED £265.00
CONTAX 300mm F4 TELE TESSAR MMMINT BOXED £295.00
CONTAX TLA 280 FLASH
CONTAX TLA 280 FLASH UNITMINT BOXED £75.00

LEICA "M", "R", & SCREW & RA	
LEICA M9 BLACK BODY CHGR,BATTERY, LEADS LEICA DIGILUX 2 COMPLETE	MINT- £1,899.00
LEICA DIGILUX 2 COMPLETE	EXC++BOXED £365.00
LEIGA DIGILOX 3 COMPLETE	MINT-BUXED £4/5.UU MINT ROYED 2605 OO
LEICA X VARIO TYPE 107 + HANDGRIP & FINGER LOOP	
LEICA EVF2 ELECTRONIC VIEWFINDER 18753	MINT BOXED £225.00
LEICA M5 BLACK ,BODYLEICA M4P BLACK (STILL WRAPPED IN BOX) OPENED	EXC++ £575.00
LEICA M4P BLACK (STILL WRAPPED IN BOX) OPENED	MINT BOXED £999.00
LEICA MIR METER BLACK BOXED.  LEICA MDA BODY SER NO 12659XX CIRCA 1970  LEICA MDA BODY SER NO 14111XXCIRCA 1975-76  LEICA IIIG BODY WITH 5cm 12 SUMMITAR & CASE	MINT 5425.00
LEIGA MDA BODY SER NO 12039XX GIRGA 1970	FXC++ £399 00
LEICA IIIG BODY WITH 5cm f2 SUMMITAR & CASE	MINT- £1,195.00
LEICA CL BODY	EXC+ £365.00
LEIGA CH 92/4 SUMMARIT FILM COMPACT  LEIGA CM 72-4 SUMMARIT FILM COMPACT  LEIGA CM 200M WITH 35-70mm VAR ELMAR FILM  LEIGA C3 WITH LEIGA 28-80 VAR ELMAR ASP FILM  LEIGA MINILUX DB EXCLUSIVE DATA BACK VERSION	MINT- £399.00
LEIGA CM ZUUM WITH 35-70MM VAK ELMAK FILM	MINT- £5/5.UU MINT- £105.00
LEICA MINILUX DE EXCLUSIVE DATA BACK VERSION	MINT BOXED £465.00
MINULIA ZOIIIII IZ.O M NURRUN FUN GLE / GL LEIGA M	I EAU++ 23/3.UU
LEICA 28mm f2.8 ELMARIT BLACK WITH HOOD Zeiss Leica M fit 35mm f2.8 zm c biogon t* M fit	MINT- £895.00
ZEISS LEICA M FIT 35mm f2.8 ZM C BIOGON T* M FIT	MINT BOXED £465.00
LEICA 40mm f2 SUMMICRON C FOR CLE / CL FOR M Leica 35mm f3.5 Summaron M with Leica Filter	MINT C225 OF
CANON 50mm f1.4 L39 SCREW WITH M ADAPTOR	
LEICA 5cm f2.8 COLL ELMAR	MINT- £295.00
LEICA 5cm f2.8 COLL ELMAR LEICA 90mm f2 COLLAPSIBLE SUMMICRON	MINT £375.00
LEICA 50mm f2 CLOSE FOCUS SUMM + SPECS	EXC++ £595.00
LEICA 50mm f2.8 COLLAPSIBLE ELMAR	MINT - £265.00
LEICA 5cm f3.5 ELMAR RED SCALE LEICA 90mm f2.8 TELE-ELMARIT BLACK 11800 LEICA 90mm f4 ELMAR C FOR CLE / CL LEICA M	MINT- BOXED \$475.00
LEICA 90mm f4 ELMAR C FOR CLE / CL LEICA M	MINT- £295.00
LEICA 90mm f4 ELMAR M MOUNT Leica 135mm f2.8 Elmarit M 11829 With Case	MINT- £165.00
LEICA 135mm f2.8 ELMARIT M 11829 WITH CASE	MINT BOXED £375.00
LEICA 135mm f4.5 HEKTOR Voigtlander 15mm f4.5 Super Wide Heliar VM III	EXC+ £75.00
VOIGTI ANDER 25mm f4 SNAPSHOT SKOPAR SCREW	MINT £475.00
VOIGTLANDER 25mm f4 SNAPSHOT SKOPAR SCREW Voigtlander 50mm f1.1 Nokton VM Leica M Voigtlander 50mm f1.5 VM ASPH Vintage Nokton.	MINT BOXED £565.00
VOIGTLANDER 50mm f1.5 VM ASPH VINTAGE NOKTON.	MINT BOXED £475.00
VOIGTLANDER BESSA L BODY CHROME	MINT £129.00
VOIGTLANDER BESSA I WINDER	MINT BOXED £149.00
VOIGTLANDER BESSA R GRIP FOR R.R2.R3 ETC	MINT BOXED £175.00
VOIGTLANDER BESSA L BODY CHROME.  VOIGTLANDER BESSA T WINDER.  VOIGTLANDER VO METER II.  VOIGTLANDER VO METER II.  LEICA 35mm 13.5 SUMMARON SCREW IN KEEPER.  LEICA MZ/MS BROWN LEATHER CASE WITH STRAP.	MINT- £375.00
LEICA M2/M3 BROWN LEATHER CASE WITH STRAP	EXC++ £65.00
LEIGA Som 2 SUMMITAR COLL LEIGA Som 72.9 ELMANTTA MOTH. LEIGA 135mm 72.9 ELMANTT M WITH SPECS. LEIGA 135mm 74.5 HEKTOR + HOOD M MOUNT. LEIGA 135mm 45. HEKTOR IN KEEPER. LEIGA 175mm 45. HEKTOR IN KEEPER. LEIGA FT DALLMEYER 13.5CM 74.5 DALRGC.	EXC++ £275.00
LEIGA 135MM 12.8 ELMAKII M WITH SPECS	FYC++ £299.00
LEICA 135mmf4.5 HEKTOR IN KEEPER	EXC+++ £199.00
LEICA FIT DALLMEYER 13.5CM F4.5 DALRAC	EXC+++ £375.00
LEICA 90mm 14 ELMAR BLACK SOREW  LEICA 135mm 14.5 HEKTOR + HOOD SCREW	EXC++ £145.00
LEICA 135mm 14.5 HEKTUR + HUUD SCREW	EXC++ £99.00
LEIGA SEZA D ELASH FOR MG-M9 etc	MINT_ \$110 00
LEICA FONOR BLACK RANGEFINDER	MINT-CASED £175.00
LEICA R9 ANTHRACITE BODY WITH STRAP	MINT £599.00
LEICA R7 CHROME BODY LEICA R8 MOTORDRIVE 14313 & CHGR 14424 LEICA R8 MOTOR WINDER GRIP FOR R8/R9	MINT - £365.00
I FICA RS MOTOR WINDER GRIP FOR RS/R9	MINT- £149.00
LEICAFLEX BODY CHROME	MINT- £195.00
LEICA 28mm f2.8 SUPER ANGULON PC WITH HOOD	MINT CASED £745.00
LEICA CURTAGON 35mm f4	MINT-BOXED £395.00
LEICA CURTAGON 35mm f4 LEICA 50mm f2 SUMMICRON 3 CAM LEICA 60mm f2.8 MACRO ELMARIT R+MACRO ADAPTO	MINI- £379.00
LEICA GOMM 12.8 MACRO ELMARTI R+MACRO ADAPTO	11 ENOTT 2000.00
	EXC++ £345.00
I FICA 28 - 70mm f3 5/4 5 ROM I FNS WITH HOOD	MINT CASED \$575 OO
LEICA 80 - 200mm f4 ROM LENS BUILT IN HOOD	MINT CASED £725.00
LEICA 80 - 200mm 14 ROM LENS BUILT IN HOOD LEICA APO-EXTENDRE 2 X ROM LEICA PRADOVIT P150 WITH 2 EXTRA SLIDE TRAYS	MINT CASED £475.00
SWAROVSKI EL RANGE 10x42 RANGEFINDER BINOS	MINI BUXED £95.00 NEW IINIISED £1 605 00
SWAROVSKI 10x42 SL HABICHT+STRAP AND COVERS	
LEICA 10 X 42 TRINOVID BA WITH LEATHER CASE	

### **Medium & Large Format**

RONICA ETRS PRISM FOR BACK & 75mm FILLENS

	EXC++ £325.00
BRONICA ETRS WL/FINDER, BACK & 75mm EII LENS	EXC++ £295.00
BRONICA SQB COMPLETE WITH 80mm FINDER & BACK	MINT £345.00
BRONICA 50mm F2.8 ZENZANON MC	EXC+++ £99.00
BRONICA 105mm f3.5 LENS FOR ETRS/i	MINT- £99.00
BRONICA 110mm F4 MACRO LENS PS	MINT- £295.00
BRONICA 150mm F3.5 ZENZANON E MC	MINT £89.00
BRONICA 150mm F4 E	
RRONICA FTRSI 120 RACK	MINT. 969 00
BRONICA ETRSI 120 BACKBRONICA POLAROID BACK FOR ETRSI, ETRS ETC	MINT ROYED \$50.00
BRONICA AEII METERED PRISM	EVC \$75.00
BRONICA PLAIN PRISM FOR ETRS/ETRSI	MAINT CTE OO
DRONICA DI AIN DDICM FOR ETRE/ETRE	WIN 1 273.00
BRONICA PLAIN PRISM FOR ETRS/ETRSI Bronica Rotary Prism Finder for Etrs, etrsi etc.	EAU++ £39.00
BRONICA MOTOR WINDER EBRONICA MOTOR WINDER E	MIN 1 - £/3.00
BRUNICA MUTUK WINDER E	EXG+++ £89.00
BRONICA 150mm F3.5 ZENZANON S Bronica 40mm f4 Zenzanon S ultra wide for Sq	MINI - £165.00
BRONICA 40mm 14 ZENZANON S ULTRA WIDE FOR SQ	MINI - £199.00
BRONICA 50mm f3.5 PS LENS & CASE	. MINT-BOXED £199.00
BRONICA 65mm F4 ZENZANON PS FOR SQ	. MINT-CASED £145.00
BRONICA 110mm F4 PS ZENZANON MACRO FOR SQ	
BRONICA 150mm F4 PS ZENZANON FOR SQ	
BRONICA 180mm f4.5 PS LENS & CASE	. MINT-BOXED £199.00
BRONICA AE PRISM FINDER SQ-i LATST MODEL	
BRONICA PRISM ME METERED FOR SQA/SQAI	
BRONICA SPEED GRIP FOR SQA/SQAI	MINT- £69.00
BRONICA FILMBACK SO-i220 FOR SOA/SOAi	MINT BOXED £79.00
HASSELBLAD 28mm f4 HC FOR H SYSTEM	MINT BOXED £1.475.00
HASSELBLAD 120mm f4 HC FOR H SYSTEM	FXC++ £1 195 00
HASSELBLAD 90mm f4 FOR X PAN I & II IN KEEPER	MINT £295.00
HASSELBLAD 150mm f4 SONNAR T* BLACK	FYC++ £195 00
HASSELBLAD 150mm f4 SONNAR CF	MINT-BOYED 2205 00
HASSELBLAD 50mm f4 DISTAGON SILVER	EYC++ £105.00
HASSELBLAD 150mm f4 SONNAR SILVER	
HASSELBLAD 250mm f5.6 SONNAR SILVER	EAU++ Z1/3.00
HACCELDIAD LITE 4 EV THE AND CHIET ADAPTOD	EXC+ £179.00
HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED £2,995.00
HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR Hasselblad GPS unit for H System	MINT BOXED £2,995.00 MINT BOXED £399.00
HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR HASSELBLAD GPS UNIT FOR H SYSTEMHASSELBLAD H13 EXT TUBE	MINT BOXED £2,995.00 MINT BOXED £399.00 MINT £165.00
HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED £2,995.00 MINT BOXED £399.00 MINT £165.00 MINT- £275.00
HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED £2,995.00 MINT BOXED £399.00 MINT £165.00 MINT-£275.00 MINT-£275.00
HASSELBLAD HTS 1.5X TLIT AND SHIFT ADAPTOR	MINT BOXED £2,995.00MINT BOXED £399.00MINT £165.00MINT £275.00MINT £275.00MINT BOXED £175.00
HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED £2,995.00MINT BOXED £399.00MINT £165.00MINT £275.00MINT £275.00MINT BOXED £175.00MINT BOXED £175.00
HASSELAD HTS 1.5X TLT AND SHIFF ADAPTOR	MINT BOXED £2,995.00MINT BOXED £399.00MINT £165.00MINT £275.00MINT £275.00MINT BOXED £175.00MINT £129.00MINT £275.00
HASSELLAD HTS 1.5X TILT AND SHIFT ADAPTOR  HASSELLAD OF SHUTTON H SYSTEM  HASSELLAD HTS EXT TIBE  HASSELLAD PHOS PRISM FINDER  HASSELLAD PHOS PRISM FINDER  HASSELLAD VEC-5 MICTRED PRISM  HASSELLAD WINDER OW AND REMOTE  MANYS BODY REALLY MICE CONDITION	MINT BOXED £2,995.00MINT BOXED £399.00MINT £165.00MINT £275.00MINT £275.00MINT £175.00MINT £175.00MINT £75.00MINT £75.00
HASSELBLO RTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED £2,995.00 MINT BOXED £399.00 MINT £105.00 MINT £275.00 MINT £275.00 MINT £129.00 MINT £275.00 MINT £275.00 MINT £275.00 MINT £275.00 MINT £199.00
HASSEILAD HTS 1.5X TILT AND SHIFT ADAPTOR  HASSEILAD OF SHUT FOR H SYSTEM  HASSEILAD HT SEIT TIBE  HASSEILAD PHOS PRISM FINDER  HASSEILAD PHOS PRISM FINDER  HASSEILAD VEC-S MICTRED PRISM FINDER  HASSEILAD VEC-S MICTRED PRISM  HASSEILAD VEC-S MICTRED PRISM  HASSEILAD VEC-S MICTRED PRISM  HASSEILAD VEC-S MICTRED PRISM  HASSEILAD OWNDER OW AND REMOTE  MAMMYA SEOS WELLY WIGE CONDITION  MAMMYA SEOS SUFFERS "G" WITH HOOD FOR MAMNYA E.	MINT BOXED £2,995.00MINT BOXED £399.00MINT £165.00MINT £275.00MINT £275.00
HASSELLAD HTS 1.5X TILT AND SHIFT ADAPTOR  ANSSELLAD OF SUNIT FOR H SYSTEM  AASSELLAD DAY  AASSELLAD DAY  AASSELLAD MIS ENTERD PRISM PRIDER  AASSELLAD DAY  AASSELLAD DAY  AASSELLAD DAY  AASSELLAD DAY  AASSELLAD VEC-B METERD PRISM  AAMAN FAC CHOMIC  AAMAN FAC SOMP FACE "OF WITH HOUD FOR MAMIYA 6.  MAMMY AS SUMP RES SERVIC POR 96 SEPTER OF  AMANIYA SOMP SES SERVIC POR 96 SEPTER OF	MINT BOXED £2,995.00  MINT BOXED £399.00  MINT £165.00  MINT £275.00
HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED £2,995.00 .MINIT BOXED £399.00 .MINT £165.00 .MINT £275.00 .MINT £275.00 .MINT £275.00 .MINT £175.00 .MINT £175.00 .MINT £175.00 .MINT £275.00 .MINT £275.00 .MINT £175.00 .MINT £175.00 .MINT £175.00 .MINT £175.00
HASSELLAD HTS 1.5X TLT AND SHIFT ADAPTOR  HASSELBLAG DUTT FOR H SYSTEM  HASSELBLAD UTT FOR H SYSTEM  HASSELBLAD WITH SHIP SHIP SHIP SHIP SHIP  HASSELBLAD WITH SHIP SHIP SHIP SHIP  HASSELBLAD WITH SHIP SHIP SHIP  HASSELBLAD WITH SHIP SHIP  HASSELBLAD WITH SHIP  HAS	MINT BOXED £2,995.00  MINT \$165.00  MINT £165.00  MINT £275.00  MINT £275.00  MINT £275.00  MINT £1295.00  MINT £1295.00  MINT £1295.00  MINT £195.00  MINT £195.00  MINT £145.00  MINT £295.00  MINT £295.00
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HASSELBLO HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED 22,985.00MINT BOXED 2399.00MINT E165.00MINT E275.00MINT E275.00MINT E275.00MINT E275.00MINT E275.00MINT E175.00MINT E175.00
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HASSELLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED E2,985,00MINT BOXED E399,00 _MINT E165,00 _MINT E275,00 _MINT E275,00 _MINT E275,00 _MINT BOXED E175,00 _MINT E275,00 _MINT E299,00 _MINT E399,00 _MINT E399
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HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED E2,985,00MINT BOXED E299,00MINT E165,00MINT E275,00MINT E2
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HASSELBLAD HTS 1.5X TILT AND SHIFT ADAPTOR	MINT BOXED 82,985,00MINT BOXED 82,985,00MINT E155,00MINT 1, 2275,00MINT 2275,00MINT SOXED 1775,00MINT 1, 275,00MINT 1, 27

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NIKON 24mm F2.8 AIS SUPERB SHARP LENS	
NIKON 45mm F2.8 GN NIKKOR	
NIKON 50mm F1.8 AIS SERIES E	
NIKON 50mm F1.8 Al	
NIKON 50mm f1.2 AIS SUPERB LENS	MINT ROYED \$399 OF
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NIKON 200mm F4 AIS MICRO NIKKOR	
NIKON 200mm F5.6 MEDICAL NIKKOR + POWI	
NIKON 300mm f4.5 AIS WITH TRIPOD COLLAR	
NIKON 600mm f5.6 Ai WITH HOOD AND FILTER	
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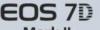
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£384.00\* £484.00

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Tamron 150-600mm



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f/5-6.3 DG OS HSM | C

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14mm F2.8 XFE++	/ Mint- £479 - £549
18-135mm F3.5-5.6 LM OIS WR XF.	E++ £499 - £529
18-55mm F2.8-4 R LM OIS XF E+	/E++ £249 - £299
18mm F2 XF R	E++ £229 - £249
23mm F1.4 XF R	Mint- £599
27mm F2.8 XF	E++ £219
35mm F1.4 XF RE++	/ Mint- £339 - £349
90mm F2 R LM WR XF	E+ £549
100-400mm F4.5-5.6 R WR XF	Mint £1.549

#### Micro 4/3rds Lenses

Panasonic 7-14mm F4 G VarioE++ £499 - £54
12-60mm F3.5-5.6 G Vario OIS E++ £25
12-32mm F3.5-5.6 OIS GE++ £139 - £15
12-35mm F2.8 G X Vario OISE+ £44
14-42mm F3.5-5.6 Asph OIS E++ £7
14-45mm F3.5-5.6 ASPH G Vario E++ £12
14-140mm F4-5.8 G OIS E++ £24
35-100mm F4-5.6 OIS Asph GUnknown £18
45-150mm F4-5.6 Asph OISE+ £10
100-300mm F4-5.6 G OIS E++ £28
100-400mm F4-6.3 Power OIS Mint- £1,09
DMW-GTC1 2x Front Converter E+ / Mint- £39 - £4
Olympus 12-40mm F2.8 M.Zuiko Mint- £59
12-50mm F3.5-6.3 ED M.ZuikoE++ / Mint- £129 - £13
12mm F2 ED M.Zuiko - Silver E++ £39
14-42mm F3.5-5.6 EZ M.Zuiko Mint- £13
17mm F1.8 M.Zuiko - Black Mint- £26
40-150mm F2.8 M.Zuiko Pro E++ £89
75mm F1.8 ED Black M.ZuikoMint- £48
75mm F1.8 ED Silver M.ZuikoMint- £48
300mm F6.3 MF Reflex TokinaMint- £18

#### Sony E-Mount Lenses

16-70mm F4 ZA OSS	E++ £499
16mm F2.8 Nex Lens	
16-35mm F4 ZA OSS FE	E+ £779
18-105mm F4 G OSS	E++ £319
18-200mm F3.5-6.3 OSS	
24-70mm F4 FE ZA OSS	E++ £649
24mm F1.4 ED AS UMC Samyang	E++ £249
28-70mm F3.5-5.6 FE OSS	Mint- £199
30mm F2.8 EX DN Sigma	E++ £99
32mm F1.8 Touit E Zeiss	E++ £349
35mm F2.8 FE ZA	
50mm F1.2 AS UMC CS Samyang	Mint- £179
50mm F2 Loxia Zeiss	Mint £589
70-300mm F4.5-5.6 G OSS FE	E+ £789
100mm F2.8 FE STM GM OSS	Mint- £1,249
QX10 Smart Phone Lens	Mint- £89

### Zeiss ZE/ZF Lenses

Canon Fit: 21mm F2.8 Distagon ZI	
50mm F2 ZE Macro	E++ £729
100mm F2 ZE Macro	E++ £879
100mm F2 ZE Macro	E++ £879
Nikon Fit:15mm F2.8 ZF.2	Unused £1,849
21mm F2.8 Milvus ZF.2	Unused £1,279
21mm F2.8 ZF.2	E++ £799
25mm F2.8 ZF	E+ / Mint- £399 - £449
25mm F2.8 ZF.2	E++ £549
50mm F1.4 ZF	
50mm F2 ZF.2 Macro	E++ £699
55mm F1.4 Otus-Distagon T* A	po ZF.2 E++ £2,179
100mm F2 ZF Macro	E++ £949
100mm F2 ZF.2 Macro	E++ £1,049
135mm F2 Apo ZF.2	E++ £1,149

### Canon EOS Lenses

10-22mm F3.5-4.5 EFS. E++ £275 10-24mm F3.5-4.5 Di II LD Tamron E++ £245 11-24mm F4 ATX PRO SD Tokina E++ £213 12-24mm F4 ATX PRO SD Tokina E++ £275 14mm F2.8 L USM II E+ / E++ £849 - £895 14mm F3.1 T ED AS IF UMC Samyang E+ £195 15-45mm F3.5-6.3 IS STM EF-M. Mint- £145 15mm F2.8 EF Fisheye E+ £345 16-50mm F2.8 ATX Pro DX Tokina E++ £345 16-50mm F4.USM E+ / E++ £349 - £388 18-55mm F3.5-5.6 EFS II. E++ £345 18-55mm F3.5-5.6 IS STM E++ £55 18-55mm F3.5-5.6 IS STM E++ £55
20-35mm F2.8 ATX Pro TokinaE+ £239
24-70mm F2.8 L USM II E+ £1,149 24mm F1.4 L USM E+ / E++ £599 - £699

### Sigma - Canon EOS Fit

10-20mm F3.5 EX DC HSM	
10-20mm F4-5.6 DC HSM	
17-70mm F2.8-4.5 DC	E+ £99
18-50mm F2.8 EX DC	E++ £119
20mm F1.8 EX DG	E++ £249
300-800mm F5.6 Apo EX DG HSM	
300mm F2.8 APO DG HSM	E++ £1,149
400mm F5.6 AF	E+ £99
50-500mm F4-6.3 Apo DG HSM	
120-300mm F2.8 EX HSM APO DG	E++ £699
170-500mm F5-6.3 Apo	E+ £159 - £199
180mm F3.5 EX Macro AP0	E++ £299
500mm F7.2 Apo	E+ £149
50mm F2.8 EX DG Macro	E++ £149
600mm F8 Reflex	E+ £179
800mm F5.6 APO EX DG HSM	E++ £2,999

### Contax SLR Lenses

E+ £199
E++ £349
E++ / Mint- £249 - £279
. Unused / New £349 - £399
E++ £399 - £449
E+ £89
E++ £149
. E++ / Unused £349 - £649
E+ £599
Unused £2,379
E+ £229
E+ / E++ £169 - £199
E++ £349
E+ / E++ £129 - £149
. E++ / Unused £159 - £449
E++ £299

### **Digital Mirrorless**

E-M1 Black Body + HLD-7 GripE++ £489	Zo Zo
E-M1 Black Body Only Exc / E++ £349 - £439 E-M10 MKII Silver Body Only E+ £279	Olv
E-M10 MkII Black Body Only Mint- £469	Mi
	Mi
OMD E-M5 Silver Body + HLD6 Grip E++ £289 OMD E-M5 Silver Body Only E+ £229	Pei
OMD E-NIS Sliver Body OffigE+ £229	Esp
Panasonic DC GH5 Body Only E++ / Mint- £1,299 - £1,449	Esp
GX80 Body Only	Esp
GF-3 Black Body E+ £79	Ro
G1 Body Only E++ £59	35
	В3
Samyang 14mm F2.8 AE ED AS IF UMC E++ £159	Zo
8mm F3.5 UMC CS II Fisheye Mint- £149	
20mm F2.8 i-functionMint- £89	Ha
500mm F8 + 2x Converter - Samsung NX E++ £99	
	90
Sony A7R II Body OnlyE++ £1,550 - £1,749	Su
A7S II Body OnlyE++ / Mint- £1,899 - £2,099	20
A7 II Body + VG-C2EM Grip Mint- £999	50
A7S Body OnlyExc £839	50
A6500 Body Only Mint- £999	55
A6000 + 16-50mm E++ £349	55
A6000 Body Only Mint- £289	50
NEX5N Body OnlyE+ £89	40
	50
Digital SLR Cameras	50

Canon EOS 100D Body Only	E++ £249
EOS 1D Mkll Body Only	E+ £249
EOS 1D MkIII Body Only	E+ £379
EOS 1DX Body Only	Unknown £1,699
EOS 20D Body Only	E+ £79
EOS 350D Body Only	Exc / E+ £49 - £59
EOS 400D Body Only	E+ £79
EOS 500D Body OnlyUr	known / E+ £79 - £129
EOS 5D MkII Body + BG-E6 Grip	E+ £649
EOS 5D MKII Body Only	. E+ / E++ £599 - £649
EOS 5DS Body + BG-E11 Grip	Mint- £2,189
EOS 5DS Body Only	E++ £1,989
EOS 650D Infra Red Body Only	E++ £429
EOS 6D Body Only	E++ £749
EOS 77D Body Only	Mint- £639
EOS 7D + BG-E7 Grip	
EOS 7D MKII Body Only	E+ £849

D3300 Body Only	E+ / E++ £749 - £796E+ / E++ £236E+ £236E+ £1,146E+ / E++ £1,789 - £1,998 E++ / Mint- £2,989 - £2,999 E++ / Mint- £2,989 - £2,999 E++ £556E+ £1,425E++ £1,425E++ £1,425E++ £1,425E++ £1,425E++ £1,425E++ £1,425E+ £277E+ / Mint- £629 - £686E+ £1,045Unknown £56Unknown £579 - £115E+ / E++ £1,999 - £144B++ £1,399 - £1,445B++ £1,495 - £198
	E++ £149
	E+ £1,399
DI DOUY OIIIY	E+ £1,398

Sigma SD Quattro + 30mm F1.4 SD1 Merrill Body + PG31 Grip SD10 + EF500 DG ST + Grip	Mint- £649
Sony A200 + 18-70mm	F± / F±± £120
A200 Body Only	
A290 + 18-55mm	
A300 Body Only	
A33 Body Only	
A35 + 18-55mm	
A350 + 18-70mm	
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### **Film Compacts**

A77 II Body Only .

Canon Sure Shot 80U	E++ £3
Sureshot 105 Zoom	E++ £2
Sureshot A1	E++ £3
Contax TVSII Titanium	Unknown £24
TVSIII Titanium	Unknown £29
Minox Leica IIIf - Black	
Nikon RF	E+ £2

Zoom 300	E+ £25 E++ £129 E+ £39 E+ £99 E++ £39
Espio 738 G	E+ £179 Unused £1,249 Unknown £39

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903SWC Complete	E+ £2,299
Super Wide C Complete	Exc £849
205TCC body + WLF + Back	E+ £2,499
503CX Black Body Only	
503CX Complete + PM5 Prism	E+ £1,199
553ELX Black Body Only	E+ £399
553ELX Chrome Body Only	E+ £299
500CM Gold Edition	Unused £3,999
40mm F4 C Black	Exc £399
50mm F4 CF	As Seen £249
50mm F4 CF FLE	Unknown £499
120mm F4 CF Macro	
120mm F4 CFE Macro	
150mm F4 C Black	
150mm F4 CF	
160mm F4.8 CB	
180mm F4 CF	
250mm F5.6 C Black	
250mm F5.6 C Chrome	
250mm F5.6 Chrome	
350mm F5.6 C Black	E+ £349

### Mamiya 7/7II

PayPall

43mm F4.5 L + Finder	E++ / Mint- £699 - £79
50mm F4.5 L + Finder	E++ £84
150mm F4.5 L	E++ £44
210mm F8 L + Finder	E++ / Mint- £299 - £599
Finder 150/210 FV704	E++ £14
Quick Shoe AQ702	E++ / Mint £79 - £9
7F702 Polarising Filter	F++ / Mint- £6

### Mamiya RB67

Pro S Complete	E+ £34
Pro S Complete + I	Neter PrismE+ £39
50mm F4.5 C	E+ £14
180mm F4.5	E+ £99
180mm F4.5 C	E+ £14
CDS Meter Prism	E+ £9
Magnifying Hood	Exc £4
P Adapter	E+ £29
Prism Finder	E+ £79
ProS 120 Mag (6x4	.5cm) E+ £5
ProS 220 Mag	E+ £29

### Minolta/Sonv AF Lenses

Minolta 28-75mm F2.8 D.





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35-70mm F4 AFE+ £29
50mm F1.7 AF
50mm F2.8 AF MacroE+ £109
70-210mm F4 AF E+ / E++ £59 - £69
70-210mm F4.5-5.6 AF E+ / E++ £49 - £59
100-200mm F4.5 AFE+ £39
100-300mm F4.5-5.6 AF E+ / E++ £59 - £89
100-400mm F4.5-6.7 Apo AF E++ £399
75-300mm F4.5-5.6 D E+ / E++ £39 - £49
80-200mm F2.8 Apo E++ £549
85mm F1.4 AF E++ £489
100mm F2.8 AF MacroE+ £159
200mm F2.8 Apo AF E+ £589
500mm F8 AF Reflex E++ £299
Sony 16-35mm F2.8 ZA SSME+ £749
16-80mm F3.5-4.5 ZA E++ £249
16mm F2.8 Fisheye E++ £499
18-200mm F3.5-5.6 DT E+ £239 - £279
18-55mm F3.5-5.6 SAM E++ £49
18-70mm F3.5-5.6 DT
300mm F2.8 G SSM II
500mm F8 Reflex E++ £379
50mm F1.8 DT E++ £59
55-200mm F4-5.6 DTE+ £39
55-200mm F4-5.6 DT SAM E++ £49
70-300mm F4.5-5.6 G SSM E++ £399
75-300mm F4.5-5.6 AFE+ / Mint- £69 - £79
Tamron 17-50mm F2.8 Di IIE+ £179
18-200mm F3.5-6.3 XR Di IIE+ £99
24-70mm F2.8 Di VC USDMint- £449
28-75mm F2.8 Di II E++ £159
60mm F2 Di II (if) MacroNew £269
70-300mm F4-5.6 Di E+ / E++ £29 - £39
70-300mm F4-5.6 Di VC USD Mint- £199
Sigma 10-20mm F4-5.6 EX DC E++ £179
12-24mm F4.5-5.6 EX DGE+ £269
16mm F2.8 Fisheve E++ £129
17-70mm F2.8-4 DC OS Macro HSM E+ £199
17-70mm F2.8-4.5 DCE+ £119
20mm F1.8 EX DG E++ £219
24-70mm F2.8 IF EX DG HSM E++ £349
28mm F1.8 Asph Exc £99
28-200mm F4-5.6E+ £39
28-80mm F3.5-5.6 AsphE+ £39
28mm F1.8 EX DGE++ £149 - £199
30mm F1.4 EX DC E++ £189
100-300mm F4.5-6.7 MC E++ £25
600mm F8 Reflex E++ £179
600mm F8 Reflex Exc / E+ £79 - £99
400mm F5.6 AFE+ £149

### Nikon AF

F5 Body Only Exc £199
F4 Body Only E+ £179
F100 Body + MB15 Grip Exc £179
F90X + MB10 Grip E+ / E++ £69 - £89
F90X Body OnlyE+ £59
F80 Black Body Only E+ / E++ £39 - £69
F80 Chrome Body OnlyE+ £49
10-24mm F3.5-4.5 G AFS DXE++ / Mint- £449 - £459
105mm F1.4 E ED AF-S Mint- £1,589
105mm F2 AF DCE+ £479
12-24mm F4 ATX PRO SD E+ / E++ £239 - £249
12-24mm F4 G AFS DX EDE++ / Mint- £369 - £399
14-24mm F2.8 G AFS ED E+ / E++ £839 - £949
14mm F2.8 AFD E+ / E++ £625 - £749
16-300mm F3.5-6.3 Dill VC PZD Tamron Mint- £299
16-85mm F3.5-5.6 G ED VR AFS DXE+ / E++ £219 - £259
17-50mm F2.8 XR Di II VC LD Tamron. E++ £199 - £209
17-55mm F2.8 G AFS DX IFED E+ / E++ £239 - £449
18-105mm F3.5-4.5 G AFS ED DX VR E+ / Mint- £99 - £129
18-200mm F3.5-5.6 XR Di TamronE+ £79
18-300mm F3.5-5.6 AFS DX VR E++ £499
18-55mm F3.5-5.6 AFS II E++ £49
18-70mm F3.5-4.5 G AFS ED DX E+ / E++ £59 - £85
180mm F2.8 ED AFE+ £249
20-35mm F2.8 AFD E+ £349
24-120mm F3.5-5.6 ED AFD E++ £149
24-120mm F3.5-5.6 G AFS ED VR E++ £249
24-120mm F4 AFS G ED VRE++ / Mint- £679 - £749
24-50mm F3.3-4.5 AFDUnknown £59
24-70mm F2.8 Di VC USD Tamron E++ £489
24-70mm F2.8E AFS VR EDE+ £1,449
24-85mm F3.5-4.5 G AFS VR E++ £269
24mm F1.4 G AFS EDE+ £869
24mm F2.8 AFDE+ £189
28-100mm F3.5-5.6 AFGE+ £39

28-300mm F3.8-6.3 Di VC PZD Tamron E++ £429
28mm F1.8 G AFS E++ £399
28mm F2.8 AF E+ £149
28mm F2.8 AFN E+ / E++ £129 - £139
35-105mm F3.5-4.5 AF E+ £79
35-135mm F3.5-4.5 AF E+ £59
35-70mm F3.3-4.5 AFE+ £29
35mm F1.4 AE AS UMC Samyang E+ £239
35mm F1.4 G AFS E++ £849
35mm F2 AFD E++ £199
50-100mm F1.8 DC HSM A Sigma E++ £749
500mm F4 AFS IFED E++ £2,499
50mm F1.4 AFD E+ / E++ £139 - £179
50mm f1.8 AFD Mint- £79
55-200mm F4-5.6 AFS DX G VR E++ £85
55-300mm F4.5-5.6 G AFS VR E++ £189
60mm F2.8 AFD Micro E++ £249
70-200mm F2.8 G AFS ED VRE+ £649
70-200mm F2.8 G AFS ED VRII E+ £999
70-210mm F4-5.6 AF E+ £49 - £59
70-210mm F4-5.6 AFN E+ £59
70-300mm F4-5.6 AFG E++ £59
70-300mm F4-5.6 ED AFD E+ / E++ £89 - £109
70-300mm F4.5-5.6 AFS IF ED VR E++ £299
75-240mm F4.5-5.6 AFD E++ £79
75-300mm F4.5-5.6 AFNUnknown £59
80-200mm F2.8 ED AF E+ £299
80-200mm F2.8 ED AFDE+ £249
80-400mm F4.5-5.6 AFD VR E+ / E++ £359 - £399
80-400mm F4.5-5.6 G AFS ED VR E+ £1,199
85mm F1.4 AFDE+ £499
85mm F1.4 Otus ZF.2 E++ £2,179
85mm F1.8 AF-S G E++ £339 - £379
85mm f2.2 Petzval Art Lens Lomo E+ £199
85mm F2.8 D PC Micro Unknown / E++ £799 - £849
85mm F3.5 G AFS Micro VR DXE+ £269
200-400mm F4 G VR AFS IFED E+ / Mint- £1,849 - £2,099
300mm F2.8 IFED AFE+ £979
300mm F4 AF EDAs Seen £239
600mm F4 AFS IFED DII E++ £3,949

### **Nikon Manual Lenses**

8mm F4 Fisheye	E+ £229
20mm F2.8 AIS	E++ £399
20mm F3.5 AIS	E++ £189
24mm F2.8 AIS	E++ £219 - £279
28mm F2 Al	
28mm F3.5 Non Al	E+ £75
28mm F3.5 PC Shift	E+ £279
35mm F2 AIS	E+ £189
35mm F2.8 PC Shift	E+ £179
45mm F2.8 P	
50-300mm F4.5 Al	E+ £299
50mm F1.2 AIS	E+ £399
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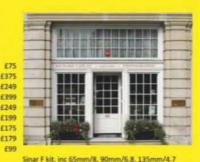
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Panoramic: Hasselblad XPan, Linhof Technorama etc

Large Format: Arca, Ebony, Horseman, Linhof, Sinar etc

**Unusual Lenses:** Angenieux, Astro Berlin, Boyer Cooke, Dallmeyer, Goerz, Kilfitt, Kinoptik, Meyer, Old Delft Pasoptik, Ross, Som Berthiot, Taylor Hobson, Zunow etc

Binoculars: Leica, Zeiss, Hensoldt, Opticron, Swarovski

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'Club Night Still Life', 2018, by Jeff Johnson



n his Elegy Written in a Country Churchyard, Thomas Gray says, 'Some mute inglorious Milton here may rest, Some Cromwell guiltless of his country's blood'. Something similar could be said of the countless photographic sites on the internet. There's a great deal of thoroughgoing rubbish out there, true, but there's always that tiny percentage that makes you go 'Wow. Why is this person not better known?'

This is a without question a good picture in its own right, but it's absolutely stunning if you've seen the original, as I have. Jeff posted it on the AP forum in a thread he started on 7 March this year, to show us the sow's ear from which he made this particular silk purse.

It was set up as an exercise at Jeff's

camera club: he had no control over the lighting, nor the component parts, nor their relationship. The straight shot was muddy, with dubious colour balance and a horrible wrinkled background. So he burned out the wrinkled background, boosted the contrast, and changed the colour balance. The result? Well, I'd be proud of it: I'd put it on my wall, or use it to illustrate a book. I've kept an eye open for his pictures on the forum since, and been seriously impressed by his use of colour. A picture of a barmaid waiting for the evening rush is somewhat reminiscent of a Dutch Old Master painting. But he doesn't have a website or, as far as I can see, Flickr accounts or the like.

Still, I hope he'll forgive me if I hop onto a hobby-horse for a moment. We share a

birthday. He's exactly 14 years younger than I: close enough, the same generation. We and many others were short changed. We were never told that there were alternatives to wage slavery. Oh, it might have been well-to-do wage slavery: I have a law degree and briefly studied accountancy. But I've been much happier taking pictures and writing. I could have made more money in another trade, but... well, the world is changing.

Creativity is the future. Machines can do the grunt-work, though we'll have to pay some people quite a lot for 'low-skilled' but necessary work such as working in care homes. Few of us, however, will need to work more than two or three days a week. How will we fill our time? Jeff is showing us the way.

Roger Hicks has been writing about photography since 1981 and has published more than three dozen books on the subject, many in partnership with his wife Frances Schultz (visit his new website at www.rogerandfrances.eu). Every week in this column Roger deconstructs a classic or contemporary photograph. Next week he considers an image from the US Library of Congress

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